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Advocating for Palliative Care in the Intensive Care Unit: A Nursing Approach

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Abstract

Purpose and Rational

Intensive Care Unit (ICU) patients often receive aggressive medical treatment with advanced illness or injury, and frequently have unmet palliative care (PC) needs. ICU nurses bear witness to the suffering of their patients and in turn, suffer a disproportionate amount of moral distress. The purpose of this clinical scholarship project is to empower nurses with knowledge and skills to advocate for PC for critically ill patients within the ICU setting at a Midwestern, urban, academic medical center. This will be achieved by providing education to nurses about PC and its utilization in the ICU setting and implementing a criteria-based screening tool that will be used during daily interdisciplinary rounds to assist nurses in advocating for PC when it is clinically indicated by evidence-based triggers.

Synthesis of Evidence

Evidence supports PC as an essential component of comprehensive, quality care. However, the culture of the critical care environment is one of aggressive, curative-focused measures, and there are many barriers to PC in this setting. Many strategies have been suggested to combat these barriers. The most widely supported strategy in the literature about increasing PC utilization in the ICU is the use of trigger-based tools to indicate which patients may have unmet PC needs.

Furthermore, ICU nurses suffer high rates of moral distress, directly related to the lack of control they have over patient outcomes and a stressful work environment. Increasing nurse empowerment has been shown to directly reduce moral distress. Education has been identified as a useful tool to increase nurse knowledge and empowerment.

Practice Change and Implementation Strategies

This will be achieved by providing education to nurses about PC and its utilization in the ICU setting and implementing a criteria-based screening tool that will be used during daily interdisciplinary rounds to assist nurses in advocating for PC when it is clinically indicated by evidence-based criteria. Nurses will participate in an online learning module about the provision of PC in conjunction with ICU care, as well as how to use a trigger-based screening tool to identify patients with unmet PC needs. A nurse-led screening tool for PC will be completed daily for every patient by nurses during a 4-week period of time and presented during daily interdisciplinary rounds. A survey will be used pre-implementation and post-implementation to assess nurses' knowledge and comfort advocating for PC use in the ICU.

Evaluation

The pre-and-post implementation mean scores from the surveys will be used to evaluate a change in the comfort, knowledge, and empowerment levels of nurses advocating for PC after the screening phase. The completed PC screening tools will be used to evaluate screening feasibility, and if the nurses felt more empowered to advocate for a PC consult for patients meeting triggers.

Conclusions and Implications for Practice

Given the supported benefits of PC, increased utilization in the ICU will have better outcomes for patients and their quality of life. If the outcomes show that nurses feel more empowered after the interventions, a long-term goal would be a decrease in moral distress. Additionally, if the screening tool is successful in identifying patients with unmet PC needs, then a process for sustainability of the nurse-led screening tool can be established to allow continued use beyond the intervention phase of this project.

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PROBLEM/ISSUE

Introduction to Clinical Problem

Despite abundant research that American adults wish to die at home, less than 20% have the opportunity to follow through with such wishes. Another 25% of American adults will receive end-of-life care in the intensive care unit (ICU) (Feeley, 2016). Life-sustaining measures are frequently offered to patients who are beyond the ability to meaningfully recover from their illness or injury. These situations can cause great distress for patients, their families, and care providers alike. The integration of palliative care (PC) for critically ill patients has become imperative as the risk of death and the burdens of survivorship in these patients continue to rise (Wolf, 2016). These burdens are numerous and can include escalating medical care requirements and resource utilization, decreased functional abilities and loss of independence, uncontrolled symptoms, and a significantly decreased quality of life (QOL) (Wolf, 2016). PC focuses on the QOL rather than quantity. PC can help patients and families navigate their medical journey with an emphasis on open communication and minimizing suffering (Altaker, Howie-Esquivel, & Cataldo, 2018).

Originating in the hospice movement for cancer care, PC is a medical specialty that focuses on alleviating suffering and optimizing QOL by addressing the physical, emotional, social, and spiritual issues that arise across the spectrum of terminal illness (Finkelstein et al., 2016). PC services in the form of PC-trained specialists who see patients on a consultative basis are now integrated into 90% of U.S. hospitals that are licensed for 300 or more beds (Jones & Bernstein, 2017).

Despite the wealth of research citing the value of PC, this service is often underutilized, or integrated too late (Pereira & Chasen, 2016). The lack of proper utilization is due to many

barriers which include the culture of the critical care setting, which prioritizes curative measures. Other barriers include poor prognostic capabilities of ICU providers, lack of PC provider resources, unclear timing for PC consultation, the misconception and association of PC only with end-of-life care, the reliance on family proxies to make decisions due to patient incapacitation, and ICU provider feelings about personal responsibilities and abilities to manage their patients (Perrin & Kazanowski, 2015).

Often, an ICU admission is equitable to a therapeutic trial of medical management of the patient's specific disease process or injury (Dahlin, Coyne, & Ferrell, 2016). Studies have shown that in the ICU setting, there is often over-aggressive management, inadequate pain control, poor communication between patients, families, and ICU care teams, and plans of care that are not aligned with patient preferences (Cox, Handy & Blay, 2012). As difficult as these situations can be for patients and families, nurses can be greatly affected as well.

Nurses build relationships with the patients they care for and when the nurse is exposed to patients who are undergoing treatment that is futile, this can cause great levels of moral distress. Moral distress is defined as "a psychological imbalance and a state of negative emotions" in which a person cannot act in accordance with what they perceive to be morally and ethically correct (Abbasi et al., 2019, p. 1495). Research shows that ICU nurses suffer high rates of moral distress in relation to the psychological distress they undergo caring for critically ill patients with aggressive medical treatment, particularly at the end-of-life (Browning, 2013). Sources of moral distress include the perception of harm to patients from interventions that cause pain and suffering, the medical prolongation of dying, and insufficient staffing (Wolf, 2016).

The repercussions of moral distress are immense for nurses, patients, and institutions. For nurses, moral distress can lead to "pain, digestive disorders, sleep disturbances, fatigue, and

the loss of energy...disturbed spiritual attitude, and emotional reactions (anxiety, fear, feeling of guilt, etc.), dissatisfaction and stress, job burnout, and the tendency to leave the job" (Abbasi et al., 2019, p. 1495).

Stressed, overburdened nurses may offer a lower quality of care to their patients, and this can directly impact the health outcomes of their patients. For patients, moral distress can cause increased lengths of stay and the need for additional medical interventions. For medical institutions that are reimbursed based on outcomes as well as depend on good reputations to drive business, moral distress can be damaging as well (Abbasi et al., 2019).

Due to the consequences of moral distress, it is imperative to consider the unmet needs of nurses. Studies have shown that the psychological empowerment of nurses is a way to combat moral distress (Altaker et al., 2018). As empowerment increases, moral distress decreases (Altaker et al., 2018). "Psychological empowerment of nurses is a means of strengthening the impact the nurses have to innovatively influence decision-making related to patient care" (Browning, 2013, p. 144). According to Altaker et al. (2018), moral distress is associated with empowerment "because it effects perceived self-determination in practice within a work setting" (p. 296). According to Abbasi et al. (2019), multidimensional interventions that focus on nurse education, enhancing the ICU environment for nurses (i.e. utilizing more ethics committees and multidisciplinary rounds), and helping nurses cope with their work environment by promoting resiliency techniques can reduce moral distress, and in turn enhance nurse empowerment (p. 1495).

As PC aims to reduce the suffering of patients, to enhance communication about goals of care, and to increase patients' QOL, an increase in PC utilization in the ICU can also facilitate an environment in which nurses do not feel distressed by the care they are providing. Additionally,

allowing ICU nurses to advocate for PC for their patients, and to be a part of care discussions, further empowers them, in turn, reducing moral distress. Further integrating PC into the ICU environment has benefits for nurses, patients, and caregivers alike.

Clinical Problem

Nelson et al. (2011) state that in the ICU, most seriously ill patients and their families will have PC needs, "including relief of distressing symptoms; effective communication about goals of care; alignment of therapies with patient values, goals, and preferences; and planning for transitions to other settings" (p. 90). PC is "a core component of comprehensive critical care…regardless of prognosis or treatment goals" (Nelson et al., 2013, p. 2319).

Evidence suggests that PC needs are often inconsistently recognized and addressed by ICU clinicians (Nelson et al., 2013). Underuse of PC in the critical care setting may result in costly, painful, and prolonged courses of treatment for patients and their families, as well as significant moral distress for care providers, specifically nurses (Wolf, 2016). At the bedside, nurses bear witness to the consequences of ICU care for the seriously ill, and subsequently suffer high rates of moral distress. Several studies indicate that nurses experience the highest levels of moral distress when nurses perceive that the patient would not benefit from receiving care (Browning, 2013). Issues faced during end-of-life care continue to rank highly as triggering scenarios for moral distress of nurses. Perrin & Kazanowski (2015) write that "approaches to palliative care decision making that rely on the involvement of nurses have been successful in advancing palliative care for critically ill patients" and that nurses should be involved with overcoming barriers to PC utilization in the ICU as they are directly affected by the stress related to end-of-life decision-making and outcomes (p. 48).

Additionally, a large body of evidence suggests that the use of trigger-based tools for PC consultation is useful to identify critically ill patients for whom PC would be beneficial (Hua et al., 2014). Giving ICU nurses tools to advocate for increased PC in the ICU should benefit their patients, and in turn, themselves.

Project Purpose

The purpose of this clinical scholarship project is to provide a review of the literature, and to empower nurses to advocate for PC in the ICU setting. This will be accomplished by providing an educational intervention to ICU nurses and implementing a criteria-based screening tool to assess patients for unmet PC needs. The aims are to decrease ICU nurse moral distress through empowerment, to evaluate the impact the education module and the screening tool have on nurse knowledge and comfort with PC utilization in the ICU setting and whether education and the tool foster behavior change.

Preliminary Clinical Practice Question

To guide the research review for this project, the following clinical question was developed: At a Midwestern, urban, academic medical center (P), do ICU nurses (P) who receive education about the use of PC in conjunction with ICU care and use a screening tool for unmet PC needs (I) have increased knowledge and comfort with PC, feel more empowered to advocate for a PC consult, and impact PC consults ordered for patients meeting evidence-based triggers for PC (O) versus ICU nurses who do not have access to this education and evidence-based screening tool (C)?

Evidence

Search Strategy

The literature review for this project was broad and evolved over time. The literature review process began in 2018, prior to the initiation of this project due to previous interests in this particular topic. The earliest project ideas centered around increasing patient access to PC in the ICU utilizing trigger-based consultation. However, during the early project development phase, the authors found a 2017 Doctor of Nursing Practice (DNP) project by Danielle McCamey of Georgetown University. McCamey's project highlighted the nursing role in advocating for PC in the ICU setting. She intervened by educating nurses on the concurrent use of PC and critical care, and on the utilization of a trigger-based nurse-led screening tool. McCamey's project served as an inspiration for this DNP project, and from there, the search strategy evolved to include the nursing component of moral distress as well as empowerment during the provision of care to the critically ill as the authors felt those were important outcomes to consider in their clinical question.

After the project focus was narrowed down, a comprehensive literature search was conducted as shown in Appendix A. Refer to Appendix A for further information on keywords, dates, databases, and numbers of articles found and used. Databases were accessed through Regions Hospital Medical Library and Winona State University's Krueger Library and included CINAHL Complete, EBSCOHost, PubMed, ScienceDirect, OVID, and MEDLINE. Librarians from both facilities were also utilized to support this search.

As the bulk of research about PC has taken place in the last two decades, no exclusions were made based on publication year. All articles reviewed were published within the past twenty years. The search criteria included the terms and phrases extracted from the clinical

practice question written in a variety of combinations and in the English language. Only peer-reviewed, full-text, medical journal articles were reviewed.

The search strategy was divided into two main focuses, to be both efficient and exhaustive. One author focused on PC utilization in the ICU setting and trigger-based interventions, and the other focused on nurse empowerment and moral distress. The author focusing on PC in the ICU as well as triggers first manually reviewed the existing base of articles on these subjects, and then expanded the search further. The other author looked broadly at moral distress and nurse empowerment initially, and then adapted the search to look specifically at how PC influences each of these. During the database searches, both authors reviewed titles and abstracts for relevancy and then proceeded forward to read the articles if deemed acceptable. Furthermore, both authors manually searched the listed references in all of the included articles to identify other applicable studies for this literature review. After a comprehensive search, 29 articles were included in the literature review. Ten of the studies are experimental or quasi-experimental in design and seven are descriptive. Seven expert opinion articles were reviewed, as well as one literature review, one clinical guideline, two systematic reviews and one meta-analysis with systematic review. Refer to Appendix B for a visual diagram of the search process.

Review of Evidence

Refer to Appendix C for a literature review table of all of the evidence derived from the literature search.

Levels of evidence. The *Levels of Evidence Grading Criteria* by Ackley, Swan, Ladwig, and Tucker (2008) are detailed in Appendix D. A limitation to this literature review is that the evidence about PC, particularly in the ICU setting, is quite limited simply based on the relative novelty of the field. However, the studies found do represent moderate quality evidence based

on the Agency for Healthcare Research and Quality's Evidence Rating system (n.d.) found in Appendix E. Four examples of level I evidence are included: a clinical practice guideline by the National Consensus Project for Quality Palliative Care (NCP) (2018), a meta-analysis and systematic review by Kavalieratos et al. (2016), a systematic review by Aslakson et al. (2014), and a systematic review by Pringle, Johnston and Buchanan (2015). The reviews included 43 randomized controlled trials (RCT) (Kavalieratos et al., 2016), 37 studies (Aslakson et al., 2014), 33 studies (Pringle et al., 2015), and the systematic review that provided the background for the NCP's clinical practice guideline utilized 139 studies (Ahluwalia et al., 2018). A level V literature review by Wolf (2016) looked at four studies and rounds out the evidence with a qualitative component.

The remaining articles varied in level of evidence, with the majority being rated at level VI or lower. Only two RCTs, one by Gade et al. (2008), and another by Abbasi et al. (2019), level II evidence, were identified. Braus et al. (2016) and Norton et al. (2007) both had level III quasi-experimental designs with sample sizes of 203 and 191, respectively. Six articles with level IV evidence had various designs with sample sizes of 262 (Creutzfeldt et al., 2015), 12 (Fedel, Joosse, & Jeske, 2013), 492 (Finkelstein et al., 2016), 385,770 (Hua et al., 2014), 24 (McCamey, 2017), and 636 (Zalenski et al., 2014). The seven level VI articles include studies with descriptive correlational designs (Altaker et al., 2018; Asayesh et al., 2018; Hiler, 2018; Sihra, Harris, & O'Reardon, 2011), a cross-sectional descriptive survey design (Browning, 2013), a descriptive pilot (Jones & Bernstein, 2017), and a retrospective, descriptive, exploratory study (Lapp & Iverson, 2015).

Furthermore, the seven level VII expert opinion articles were immensely useful, as they offered much insight into the clinical problem, as well as consensus reports and guidance from

experts in the field. Although they represent the lowest level of evidence, these articles provide useful information illuminating the current barriers to PC in the ICU setting, as well as suggestions for overcoming them.

Clinical practice guideline. One clinical practice guideline was included in the literature review. The NCP published their 4th edition of a clinical practice guideline for the provision of quality PC in 2018. The NCP also commissioned a systematic review through the RAND Evidence-Based Practice Center, written by Ahluwalia et al. (2018), to inform the recommendations in the clinical practice guideline.

The Appraisal of Guidelines for Research and Evaluation II (AGREE II) tool was completed by both authors to evaluate the NCP's clinical practice guideline (The AGREE Research Trust, 2017). Refer to Appendix F for individual ratings on the AGREE II scoresheet and for domain scoring.

Domain one. The first domain is aimed at the scope and purpose of the clinical guideline. This clinical guideline is very expansive, in that it is meant to inform what quality PC is, in all settings, for all patients with serious illness. The NCP does very clearly describe what the objectives are and explicitly states that this guideline is meant to be utilized in any setting where PC is provided, regardless of PC provider, whether a specialist PC or primary provider, population, or care area. Definitions are given for PC as well as "serious illness", but because of the intended broadness of applicability, these definitions must remain relatively ambiguous and inclusive.

As was a repeated critique, the systematic review is where the health questions are described. Technically, the NCP did include most of the information appraised by the AGREE II

tool, but much of it is in the accompanying systematic review, and not in the body of the guidelines. Overall, this domain scored the highest at 91.67%.

Domain two. The second domain reviews the stakeholder involvement related to the guideline. Due to the expansiveness of this guideline, it required expert input from many specialties. Sixteen national organizations participated in the development of the recommendations as well as many more subject matter experts. The target users were clearly defined as well. The inclusion of the target population in the development of the recommendations is less clear, but again, their views and preferences are discussed in the systematic review, not the body of the guideline. This domain scored 80.56%.

Domain three. The third domain focuses on the rigor of development. Overall, this domain was rated lower at 51.04%. Most of the information about the development of the recommendations was mostly, if not completely, left out of the guideline and only included in the body of the systematic review. The guideline frequently state that more information can be found in the systematic review, but again, this puts the burden upon the reader to locate and navigate through yet another expansive document. Including details about recommendation development within the body of the guidelines could improve the overall rating in this domain.

Domain four. The fourth domain looks at the clarity and presentation of the recommendations. As it is a continued theme throughout the guideline, the recommendations are fairly broad, given that they are to apply any seriously ill patient in any setting of care. However, many examples are included in each section and provide more area-specific guidance. The guideline is well-organized and easy to follow, with key components clearly identified. This domain scored 72.22%.

Domain five. The fifth domain assesses the applicability of the guideline. It is difficult to truly understand how applicable the guideline will be in an individual environment, due to the comprehensiveness intended by the NCP. The guidelines are divided into eight different domains and provide an exhaustive list of recommendations. While examples are provided to describe PC in different environments, little is stated about the implications or facilitators and barriers of implementation of PC. This domain scored 52.08%.

Domain six. The sixth domain considers the editorial independence of the guideline. It was rated the lowest at 41.67%. Competing interests are addressed for the main authors on the writing committee, but it is explicitly stated that many national organizations participated in the development of the guidelines, as well as numerous subject matter experts. It is unknown whether these contributors had competing interests or not. Funding issues are also not well addressed. The different funding organizations are stated, but there is no mention of their views being excluded from the guideline development. The components in this domain are understated, which is why it received the lowest rating.

Overall guideline assessment. Overall, the guideline is clearly presented and has many useful recommendations that can be beneficial for seriously ill patients in a variety of care settings. It is comprehensive in nature so that every reader can use the information provided within their own care area. However, a lot of the basis for the guideline is not included directly in the body of the publication, but instead is separately discussed in the accompanying systematic review. Having important components of the clinical guideline presented across two different documents is burdensome for the reader. Additionally, the goal of being all-encompassing in scope somewhat weakens the guidelines. The authors are unable to be

explicitly clear and unambiguous. This clinical practice guideline is more of a rough outline of how quality PC can be provided, and less of a specific step-by-step process.

Given that PC is a more novel specialty in medicine, as well as the slow integration of PC into the ICU setting, there are no clinical practice guidelines in existence specifically focusing on PC in critical care settings. Guidelines for inclusion of PC in other practice settings, like oncology, are available, however these were excluded as PC was originally introduced as an adjunct to oncological and hospice care. PC is already woven into the culture of these areas, so the facilitators and barriers, as well as methods of implementation and specific recommendations in the guidelines of these settings are not as applicable or comparable in the ICU environment. Inclusion of this guideline in the literature review gives more evidence as to how PC can and should be implemented, as well as further details the benefits of PC.

Meta-Analysis. There is one meta-analysis included in this review and a critical appraisal of the meta-analysis was completed using an appraisal method adapted from DiCenso, Guyatt, and Ciliska (2005). See Appendix G for a completed table of the critical appraisal for the meta-analysis. The sections evaluated through this tool include the literature review, study selection, critical appraisal of the studies, similarity of questions and groups, treatments, outcomes, data synthesis, and questions to ask when reviewing the meta-analysis.

Kavalieratos et al. (2016). The purpose of this meta-analysis was to evaluate the association of PC with QOL, symptom burden, and survival. After evaluation of the evidence, the authors found that PC interventions were associated with significant improvements in QOL and symptom burden, improved advanced care planning, an increase in patient and caregiver satisfaction, and reduced healthcare utilization (Kavalieratos et al., 2016, p. 10). These results

support the promotion of earlier PC utilization for patients with chronic and acute illnesses that reduce QOL.

Strengths. The search methods were thoroughly described. The quality of studies was assessed by independent raters, and the included studies were of high methodological quality. A health science librarian conducted the literature search independently (Kavalieratos et al., 2016). The inclusion and exclusion criteria were clearly described and fairly applied to studies included in this meta-analysis. Although studies seemed to indicate similar effects, heterogeneity was quantified and determined that it was explained by study setting. Standard mean differences (SMD) and hazard ratios were the methods used to combine the studies.

Weaknesses. Although a thorough search of the included databases was performed, only four electronic databases were included in the study. Including more databases would lead to a more comprehensive search. The validity of the studies was not described in terms of external validity, internal validity, or construct validity and validity criteria are not reported. Likely effect sizes were not presented, and null findings were not discussed. Publication bias was assessed; however, the results should be interpreted with caution because the statistical tests used to assess publication bias may have been underpowered (Kavalieratos et al., 2016).

Systematic review. There are two systematic reviews included in this literature review. Duffy's Critical Appraisal of Systematic Review (2005) was used to thoroughly evaluate the literature through a series of questions. The quality of this review is determined by an increased number of "Yes" responses. Refer to Appendix H for critical appraisal of the systematic reviews.

Aslakson et al. (2014). The purpose of this study was to perform an extensive review of the literature to determine what evidence-based interventions improve the integration of PC in the adult ICU. There were 37 studies included in this review which consisted of five randomized

control trials (RCTs), one case-control study, and 35 pre-test/post-test cohort studies. Although there were 37 studies included in the review, 36 interventions were analyzed due to one of the studies contrasting two interventions against a single control (Aslakson et al., 2014). Interventions were divided into two categories including consultative and integrative. Consultative interventions consisted of ethics consultations, PC consults, trigger systems, family coordinator involvement, and including a PC member during multidisciplinary rounds (Aslakson et al., 2014). Integrative interventions included multidisciplinary communication, informational brochures and booklets, PC education, structured communication with nurses and social workers, use of nurse champions, family participation in rounds, clinician feedback, and standardized PC order sets (Aslakson et al., 2014). Due to the variety of outcome measures among the 37 studies, the four most frequently used outcomes were evaluated which included ICU LOS, hospital LOS, family satisfaction, and mortality (Aslakson et al., 2014). Of the 21 studies that measured ICU LOS, 13 of them had a decreased ICU LOS with integrated PC (Aslakson et al., 2014). Of the 14 studies that measured hospital LOS, eight of them showed a reduction in hospital LOS with integration of PC (Aslakson et al., 2014). Of the 16 studies that measured mortality, 14 of them showed no significant change in mortality rate with the integration of PC, one intervention showed a decrease in mortality, and one intervention showed an increase in mortality (Aslakson et al., 2014). Only one of the 14 studies showed an increase in overall satisfaction when PC was involved (Aslakson et al., 2014). Overall results show that PC interventions significantly decrease hospital LOS and ICU LOS, but do not significantly impact mortality rate or family satisfaction (Aslakson et al., 2014). Integrating PC can significantly impact the quality of care provided to adult patients in the ICU.

Strengths. The purpose of this systematic review was to evaluate evidence-based interventions that improve the delivery of care in the adult ICU through a more comprehensive search than previously completed literature reviews on the topic. In addition to the five electronic databases searched, a hand search from both personal files and reference lists of review articles, consensus guidelines, professional society statements and articles was included. The search methods were represented in a flow diagram, which allows for easy comprehension of how the search strategies were employed. Exclusion and inclusion criteria were thoroughly described. A well-formulated table summarizing each of the articles findings was included in the review. Although homogeneity of the outcome measures and interventions of the studies in the review made comparing studies challenging, using the four most common measures allowed for a meaningful comparison of the studies which were synthesized in a clear narrative format. Lastly, it is important to note that a thorough discussion for directives for future research was presented.

Weaknesses. The research question was not clearly stated in a specific research format, such as a PICO question, and the outcomes considered were not mentioned. Although the population being studied included adult patients in the ICU ages 18 years and older, other demographic data is not included, which limits generalizability of results, as confounding variables are not accounted for. Validity of the studies was not assessed appropriately, as there was no discussion of external validity, internal validity, or construct validity of any of the studies included in the review. Statistical tests were not performed due to the heterogeneity of the outcome measures and interventions, limiting the quality of the evidence to a narrative review. Clear recommendations based on the findings of this study cannot be drawn without statistically significant findings.

Pringle et al. (2015). The purpose of this review was to evaluate evidence associated with those in need of PC in the acute care setting and its connection to the perception of patient's dignity (Pringle et al., 2015). Thirty-three articles met inclusion criteria, although two of the articles included the same cohort of participants with results from different perspectives, which have been grouped as the same study (Pringle et al., 2015). Therefore, a total of 31 articles were evaluated. Due to the diversity of studies, the results were divided into three sub-groups included patient perspectives, family perspectives, and healthcare provider perspectives. There were 19 studies that included data from patient perspectives. According to patient perspectives, improvement in patient dignity was facilitated by being treated with respect and compassion from healthcare workers and adequate symptom management (Pringle et al., 2015). There were eight studies that evaluated family members' or close friends' perspectives in this review. Commonalities among family perspectives included healthcare worker approaches to care, setting in which care is provided, and bereavement support for relatives (Pringle et al., 2015). Nine studies included in the review discussed healthcare worker perspectives of dignity for PC patients. The common themes for providing dignified care in this group included symptom management and care setting (Pringle et al., 2015). Healthcare providers feel like they are at a disadvantage to providing dignified care to patients if they have inadequate resources or symptoms such as pain are difficult to control (Pringle et al., 2015). Common threats to patients' dignity from all three groups' perspectives were identified as "symptom control, approaches and models in care provision, and healthcare settings and design" (Pringle et al., 2015, p. 690). The overall findings of this review emphasize the importance of dignity and patient-centered care in the acute care setting for PC patients.

Strengths. The issue of this review is clearly defined. Patients receiving PC in the acute care setting are at a higher risk of having their dignity diminished or violated, therefore investigating ways to enhance, maintain, and promote dignity are essential for patient-centered care (Pringle et al., 2015). The search strategies used in the review were clearly identified and depicted with a flowchart diagram. A comprehensive list of inclusion and exclusion criteria was defined. A detailed and organized table was completed that summarized each study included in the review. Comparison of studies was distinguished using a data extraction table. Further comparison of studies was done by dividing them into three sub-groups, making it easier to identify connections among perceptions in patients, families, and healthcare providers. Conclusions of the review are supported by the data reported. After evaluation of common themes in factors that threaten PC patients' dignity, it can be concluded that healthcare workers need adequate training and support, and the acute care environment in which care is provided in needs to be comforting for the patients (Pringle et al., 2015).

Weaknesses. Although the aim of the study was stated, there was not a clearly stated research question. Seven electronic databases were used in the literature search, however, other methods to locate research studies were not used. There was not discussion of the possibility of publication bias. There is no discussion of the validity of the studies included in the review. Heterogeneity of the studies was not assessed. The studies were compared in a narrative form. There were no statistical tests performed, therefore the studies were not combined appropriately. Specific directives for new research were not proposed. Due to the absence of statistical findings, the recommendations based on this study cannot be definitively drawn.

Synthesis. These systematic reviews add to the body of evidence supporting the PICO question. Several themes were revealed from the reviews that relate to the benefits of PC in

patients in the acute care setting. There was no evidence of harm in PC interventions to ICU patients (Aslakson et al., 2014). PC was found to decrease hospital and ICU LOS (Aslakson et al., 2014). PC interventions were found to improve QOL and symptom burden (Kavalieratos et al., 2016). Pringle et al. (2015) discovered that it is important for healthcare workers to have adequate training related to symptom management which includes proper methods of communication, pain control, and managing patients' anxiety and distress (Pringle et al., 2015). The evidence of these systematic reviews supports the development of this PC DNP project.

Quality of systematic review.

Strengths. The quality of evidence in the included reviews is considered comprehensive. Each of the reviews included a clearly described purpose and inclusion and exclusion criteria. Two of the studies thoroughly discussed the search criteria utilized. The interventions and outcomes measured were specified in all the systematic reviews. Specified findings for each study were summarized. Two of the studies discussed implications for future research and practice evidence-based practice changes.

Weaknesses. Heterogeneity of interventions and outcomes included in these systematic reviews made comparison of studies difficult. The outcomes of each study evaluated different outcomes which limited the overall synthesis of the evidence. Because statistical methods were not used to compare studies by Pringle et al. (2015) and Aslakson et al. (2014), the quality of evidence is limited. Recommendations from Pringle et al. (2015) and Aslakson et al. (2014) are subjective, due to the lack of statistically proven findings. Validity in each of the studies was not assessed and reported appropriately.

Research evidence. As stated above, all articles utilized in this literature review and major highlights can be found in Appendix C. A total of 17 research articles were identified, with

10 experimental or quasi-experimental studies and the remaining seven as descriptive in design. A literature review added another four articles, two quantitative and two qualitative studies. Seven expert opinion articles rounded out the evidence.

This literature review revealed many important themes. The descriptive studies and expert opinion articles illuminated much about moral distress in nursing, as well as described the current state of PC inclusion in the ICU. The interventional studies demonstrated concrete ways to increase the utilization of PC on critical care units. The most common themes to emerge are listed below and a theme matrix can be found in Appendix I1.

Benefits of PC in the ICU. Many of the articles in the review provided evidence as to why the integration of PC in the ICU aligns with the provision of quality healthcare. Research demonstrates the following benefits: increased rates of advanced directives and clarification of patient and family-centered goals of care; decreased costs and utilization of resources, $p = 0.001$ (Gade et al., 2008); shorter hospital stays, $p < 0.001$ (Braus et al., 2016), and $p < 0.001$ (Norton et al., 2007) and fewer readmissions, $p = 0.04$ (Gade et al., 2008); prevention of pain and suffering, with 7 out of 11 studies demonstrating a reduction in symptom burden (Kavalieratos et al., 2016); ethical dilemma management; increased hospice utilization; increased family and patient satisfaction, $p = 0.04$ (Gade et al., 2008); decreased rates of staff moral distress and conflict, with 93.3% of ICU providers and nurses at one hospital agreeing that they personally benefitted from PC involvement (Jones & Bernstein, 2017); better communication, $p < 0.001$ (Gade et al., 2008); maintenance of QOL; and the recognition of patient needs beyond the medical model (Aslakson et al., 2014; Aslakson, Curtis, & Nelson, 2014; Baker, Luce, & Bosslet, 2015; Cox et al., 2012; Creutzfeldt et al., 2015; Fedel et al., 2013; Finkelstein et al., 2016; Hua et al., 2014; Lapp & Iverson, 2015; McCamey, 2017; Nelson et al., 2011, Nelson et

al., 2013; Perrin & Kazanowski, 2015; Pringle et al., 2015; Sihra et al., 2011; Weissman & Meier, 2011; Zalenski et al., 2014).

Barriers to PC in the ICU. Barriers to PC in the ICU were identified by many of the articles and include: poor prognostic capabilities of ICU providers, prioritization of curative measures, cultural opposition to end-of-life care in the ICU setting, lack of PC provider resources, unclear timing for PC consultation, misconception and association of PC only with end-of-life care, reliance on family proxies to make decisions due to patient incapacitation, and ICU provider feelings about personal responsibilities and abilities to manage their patients (Aslakson, Curtis, & Nelson, 2014; Baker et al., 2015; Cox et al., 2012; Finkelstein et al., 2016; Nelson et al., 2011; Perrin & Kazanowski, 2015; Pringle et al., 2015). Many of the authors emphasized the need to identify ways to increase PC utilization in the ICU setting, including suggestions for more education for nurses and physicians, as well as criteria-based tools to identify patients with unmet PC needs. Perrin and Kazanowski (2015) emphasized the important role that nurses play in overcoming barriers to PC in the ICU, as they are the ones at the bedside, assessing for the comprehensive needs of the patient and their support system.

Moral distress. Perrin and Kazanowski (2015) noted that ICU nursing staff suffer a disproportionate amount of moral distress related to their work environment. The most frequently cited source of moral distress for ICU nurses is the provision of care that they do not feel is in the best interest of their patients. Abbasi et al., (2019), Asayesh et al. (2018) ($p = 0.03$), Hiler et al. (2018) ($p < 0.001$), and Wolf (2016) ($p = 0.07$) all found that there was a strong association between nurses providing futile care and increased moral distress. Aslakson, Curtis, and Nelson (2014) noted that a national survey of surgeons found that 40% endorsed conflict with nurses about appropriate goals of postoperative care and called out the need for more

support “against the strains of ICU practice” (p. 2420). Cox et al. (2012) specifically addressed the fact that ICU staff have an emotional response to the deaths of their patients, and these must be addressed to avoid burnout and other long-term sequalae (p. 324). In addition to the provision of futile care, Altaker et al. (2018) found that as ethical climate scores decreased, moral distressed increased ($p < 0.001$).

Decreasing moral distress. Moral distress and burnout are well-documented among ICU nurses, but there is less literature available about how to reduce it. Many of the studies strongly correlated nurse empowerment with lower levels of moral distress. Browning (2013) and Altaker et al. (2018) both used the Psychological Empowerment Instrument (PEI) survey tool to evaluate critical care nurses’ self- perception of their work environment. Browning (2013) found that total PEI scores were negatively correlated with moral distress frequency ($p < 0.01$), and nurses with higher perceived empowerment experienced moral distress less often. Altaker et al. (2018) also found that higher empowerment scores were associated with lower levels of moral distress ($p = 0.02$). Abbasi et al. (2019) used an experimental moral empowerment intervention with ICU nurses and found a significant decrease in moral distress ($p < 0.05$).

Numerous authors of articles about PC utilization in the ICU suggested that increasing nurse collaboration in end-of-life decision-making could reduce the overall levels of stress (Cox et al., 2012; Jones & Bernstein, 2017; Nelson et al., 2011; Nelson et al., 2013; Pringle et al., 2015; Wolf, 2016). Perrin and Kazanowski (2015) state that for nurses, being involved in the decision-making processes “rather than merely enacting the results” can potentially reduce distress (p. 48). Inclusion of nurses in rounds and in family care conferences were suggested

ways to empower nurses. Additionally, education about PC in the ICU was frequently cited as essential for both nurses and ICU providers and could also lead to increased empowerment.

Education for PC. The need for further education about the concurrent use of PC in the critical care setting was emphasized frequently throughout the literature, particularly in the expert opinion articles. Appendix I2 outlines suggested topics and methods of delivery. Aslakson et al. (2014) suggested that education was important in all of critical care, but particularly in the surgical ICU setting, where the cultural emphasis is on interventions. Weissman and Meier (2011) suggested that more education about primary PC provision by nurses and ICU providers would allow for specialty PC resources to go to the most complex patients, as well as improve the overall quality of care for patients. Baker et al. (2015), Perrin and Kazanowski (2015), Pringle et al. (2015), Zalenski et al. (2014) and others all either suggested the need for education on ways to recognize patients with unmet PC or needs, or actually implemented it. Fedel et al. (2013) found that after an educational intervention on a particular screening tool, nurse comfort with identification for PC needs increased significantly, $p = 0.005$. These results were replicated by McCamey (2017), $p = 0.001$. Additionally, Wolf (2016) found that End-of-Life Care Nursing Consortium (ELNEC) education decreased moral distress, $p = 0.02$. Nelson et al. (2011) noted a study in which investigators found that a nurse-focused intervention involving education improved nurses' perceptions of the quality of patient deaths, and reduced ICU days before death for those who subsequently passed in the ICU setting. The NCP clinical practice guidelines for PC (2018) also emphasized the need for continued education on PC for all healthcare providers. Education in many forms is shown throughout the literature to be an essential component of increasing the acceptance of PC in the ICU.

Trigger-Based Models. Another frequently mentioned intervention to increase PC in the ICU is the use of criteria to identify those with unmet PC needs. In this literature review, many of the studies were comparable in design and the authors frequently cited each other or used the similar trigger criteria. The majority of studies occurred at single sites, with relatively small sample sizes.

To increase patient access to PC services, the studies evaluated different criteria-based models. The triggers used in the studies were varied. Norton et al. (2007) developed one of the earliest sets of triggers. Braus et al. (2016), Finkelstein et al. (2016), Hua et al. (2014), Jones and Bernstein (2017) and Sihra et al. (2011) all used the criteria developed by Norton et al., or an adapted version specific to their study setting. Creutzfeldt et al. (2015) used a four question Palliative Needs Screening Tool (PNST) that recognized specific identifiers for PC. Fedel et al. (2013) used the Palliative Performance Scale version 2 (PPSv2) to looked at the functional abilities of patients. Gade et al. (2008), Lapp and Iverson (2015) , Weissman and Meier (2011) and Zalenski et al. (2014) developed their triggers from miscellaneous sources. McCamey (2017) used the criteria identified by Lapp and Iverson. Nelson et al. (2013) reiterated the importance of adapting the triggers to the individual setting in which they are being used, but generalized that they usually fall into the following domains: symptom burden, family distress, poor prognosis for survival or acceptable recovery, and healthcare resource utilization.

Some authors attempted to identify which triggers were most frequently being met or were correlated with patient mortality and therefore indicated which patients could benefit most from PC. Finkelstein et al. (2016) found that readmission to the ICU had an odds ratio of 19.41 for mortality, with metastatic cancer following closely, with an odds ratio of 16.40. Hua et al. (2014) found that the most frequently met trigger was length of stay greater than 10 days,

followed by Stage IV malignancy. Creutzfeldt et al. (2015) found that 53% of their identified patients from the PNST required psychosocial support, and when compared to the Norton et al. (2007) triggers, 46.3% of their patients met these criteria as well, with the most common trigger met being brain hemorrhage requiring mechanical ventilation. Most of the studies identified that around 14-26% of ICU patients met at least one trigger (Aslakson et al., 2014; Finkelstein et al., 2016; Hua et al., 2014; Norton et al., 2007). Lapp and Iverson (2015) found that 88% of patients met at least one trigger on their 22-item list, which indicates that this tool was likely not specific enough to identify those most in need. While there is not currently a validated optimal list of triggers, the evidence points to the ability of a trigger-based model to flag those patients with PC needs.

Evaluation of findings. The body of literature provides high quality evidence of the benefits of PC, despite its relative novelty in the U.S. healthcare system. This has been proven in studies with higher levels of evidence, including an RCT (Gade et al., 2008) and the systematic reviews. It also is stated in the clinical guideline by the NCP (2018), which is also level I evidence. However, in the ICU setting, PC has not been readily accepted. There are many reasons for this, including a PC philosophy emphasizing comfort and patient QOL versus the aggressive, curative measures-focused culture in the ICU, misunderstandings about what PC is and what it can provide, and a provider perception that they are already providing PC or that PC translates to giving up on their patient(s). The various barriers are explored in several of the expert opinion articles, which represent lower levels of evidence, but nonetheless, are reliable given the relative consistency across the articles. PC provision in the ICU is considered to be part of comprehensive, quality care, and it is a vital service to offer patients and their families. This is stated repeatedly throughout the studies from all levels of evidence and is detailed in the

NCP's clinical practice guideline (2018). Furthermore, there is literature that supports that ICU nurses working within the stressful critical care environment suffer the highest rates of moral distress, particularly when they perceive that they are providing futile care. There is evidence that levels of distress decrease as empowerment increases. Although one RCT by Abbasi et al. (2019) was identified, these studies are mainly comprised of descriptive studies, level V—VI evidence, but provide valuable qualitative insight into the nursing experience. These studies were generally smaller in scale and signify moderate quality evidence. With the overall strong evidence of the net positive benefits of PC for patients, families, and healthcare providers alike, it is important to ensure that all seriously ill patients with PC needs receive input from specialty PC providers.

The most effective way to increase patient access to this service is currently the topic of ongoing research. Literature suggests that a trigger-based design can help alert providers which patients could most benefit from PC services and that education is an essential component in ensuring that these tools are used correctly and that there is staff buy-in. The body of research demonstrates that when the criteria are in place, although it is not yet clear which triggers are the most efficacious, collaboration with PC providers increases. While there are many opinion articles and consensus reports about triggers included in this review, the interventional studies using triggers compromise mid to higher levels of evidence, levels II-IV, fortifying the evidence.

Education is another way to increase nurse collaboration by providing them the skills to recognize unmet PC needs, as well as better communication techniques, and more confidence in the care they are providing. Articles from all levels of evidence reiterated this assertion. This increased nurse empowerment should theoretically lead to lower levels of moral distress.

Creating a setting in which nurses are empowered to advocate for PC and in which PC is readily utilized is supported by the literature and is the overarching goal of this PC DNP project.

Effectiveness of interventions. The effectiveness grading criteria developed by Ackley et al. (2008) was used to evaluate ten interventional studies and are outlined in Appendix J. The included interventional studies were reviewed for effectiveness and are summarized in Appendix K. Only two studies, an RCT by Gade et al. (2008), and an RCT by Abbasi et al. (2019), were deemed to be *Effective.* These studies were level II evidence, the highest level of evidence represented among the interventional studies. The Gade et al. (2008) study provides solid evidence for the use of PC in the ICU setting, but the intervention itself is not useful for this DNP project, as the institution already recognizes PC as an important component of quality care. The Abbasi et al. (2019) provides evidence for the relation between moral distress and empowerment of nurses, but the intervention only focuses on nursing, and requires many resources, so would also not be useful for this scholarly project.

The remainder of the studies were deemed to be *Possibly Effective*. These studies can be generalized into educational interventions for nurses about PC use in the ICU and how to use a screening tool, along with the implementation of that screening tool, or simply the use of an evidence-based screening tool itself. The effectiveness of trigger-based criteria to evaluate if a patient has unmet needs has been replicated in numerous studies. However, it is not clear which triggers are the most reliable. It is also unclear which format for trigger-utilization is most appropriate. Nurses were responsible for completing the tool in some of the studies. Some of the studies only evaluated patients on admission to the ICU, and others evaluated them during daily rounds. More research is required to determine which triggers are most effective, as well as the optimal route for implementing them.

Educational interventions for nurses about PC use in the ICU as well as how to use the different screening tools did demonstrate increases in nurse buy-in to PC as well as comfort in assessing for PC needs and advocating for PC consults for their patients. However, more research is needed as to exactly what formats of education are best for nursing staff, as well as if the education has meaningful influence on nurse empowerment.

Gaps in evidence. Although a sizeable body of evidence regarding PC in the ICU exists, most of it is from the last two decades as the specialty has only recently been integrated into the modern care model. Because of this, there are gaps in the literature. While many of the authors recognized that the provision of ICU care is immensely stressful for nurses and providers, there is no exact consensus on how to mitigate the burnout and moral distress that this environment facilitates. There is little concrete data about how PC helps to reduce the stress on all healthcare providers in the ICU, although many of the authors hypothesize that implementing PC more fully into critical care would result in increased staff satisfaction. Given the proven benefits for patients, PC is still immensely important, but evidence for staff burden reduction could aid in convincing providers to use it more readily.

Another issue with less concrete evidence is why ICU providers are resistant to PC. There is strong evidence of their reluctance, as well as many ideas of why providers have been slow to embrace it, but much of this evidence remains expert opinion and qualitative in nature. Without specific reasons for provider reluctance, it is difficult to assess the best way to counteract this resistance.

Additionally, education is frequently listed as an important intervention to get PC more frequently used in the ICU setting. The methods of education and to whom it is offered vary widely across the different studies. Some studies used online learning platforms and others used

face-to-face educational settings. The time allotted for education also varied widely, from a few hours to training given over a number of days. The content differed by study as well, with some using established curriculums, like ELNEC training, and others using content pieced together at the individual institution from resources like the Center for Advancing Palliative Care (CAPC). Furthermore, many of the expert opinion articles state that nurses *and* providers can benefit from additional education about PC, but many of the interventions are aimed at nursing staff only. Gaps include both the most appropriate educational approaches, as well as the effect education would have on all ICU staff members.

Lastly, although trigger-based models have been shown to successfully identify ICU patients with unmet PC needs, it is more difficult to ascertain which triggers are the most effective at doing so. It is also unclear what screening process is most effective. Many of the studies only screened patients on admit, so those with unmet needs later in their ICU stay were not identified. Who does the screening, as well as what tools are used, are also unclear. More research in all these areas is needed to identify the best course of action to increase PC utilization in the ICU setting.

Theoretical Basis

PC is a multifaceted approach to treating patients with a life-limiting disease process. As a specialty, it aims to focus on QOL over quantity. Essential components of PC include empathetic communication and supported decision-making, along with care coordination (Dobrina, Tenze, & Palese, 2014). A theoretical framework that aligns well with increasing PC use in the ICU setting is Murray's Transitions Model of Palliative Care (TMPC).

Through work as an advanced practice nurse, Murray recognized that there are two aspects of the traditional PC model that are problematic. First, it was initially developed to only support

those suffering from cancer. Second, there are new demographics shaping end-of-life care needs. Medical advancements are enabling baby boomers to live longer with progressive chronic diseases, so symptom management along with realistic goals of care are increasingly important (Murray, 2007). Through extensive research, Murray concluded that the current cancer-focused PC model is inadequate to meet the needs of patients who are living with non-malignant, life-limiting diagnoses (Murray, 2007). In response, Murray developed a new framework to prescribe a practice theory for PC that would better suit the current context in medicine. Murray posited that the values of the patient and their family should be the focus, regardless of care setting and diagnosis. Murray also integrated a chronic condition management model that emphasizes quality communication between patients and providers, allowing for patient engagement and empowerment (Murray, 2007). In theory, this model should also empower nursing staff as well.

In the justification for the creation of the TMPC, Murray recognizes that non-cancer patients typically receive more interventions that prolong their lives and less symptom management support (Dobrina et al., 2014). This is particularly true in the ICU setting. Murray states that her aim is to expand services to patients with illnesses that will prove fatal, whether that is over the course of days, months, or years (Murray, 2007). This parallels concurrent use of PC for critically ill patients. Murray emphasizes that patients and their families should be active, empowered participants. Murray outlines that over the course of the patient's illness, the care offered, and intensity of services provided will change, based on the situation and the patient's capability to self-care. These transitions will occur in conjunction with an open, honest dialogue with the patient and the family, fully taking their preferences into account throughout (Dobrina et al., 2014). PC use in the ICU allows for patients to have these open lines of

communication with the PC team, so that their wishes are well known before drastic deterioration or a continued escalation of care occurs. Murray believes that a transitional model allows nurses to assist patients and families in achieving optimal comfort and function, through education and support (Dobrina et al., 2014). This aligns with the clinical question in that ICU nurses can expect to feel more empowered with PC utilization as their patients' goals of care are more clearly recognized and less futile care is given.

Murray's TMPC acknowledges that PC is currently relegated to use for those in the throes of death and offers a concrete proposal for how it can be applied to the ever-growing population of those living with complex diseases. It is both relevant now and going forward and Murray explicitly describes how nursing practice must change to accommodate her model. Murray (2007) writes that PC "is not a discrete time bounded episode" and that palliative nursing care is about helping people to live well despite terminal disease and regardless of prognostic time (p. 375). ICU nurses understand that not every patient will survive their illness, and PC use in the ICU can facilitate better communication and less medical futility. PC utilization in the ICU seems to fit Murray's vision.

Institutional Mission

In addition to Murray's TMPC as a framework for the proposed intervention, the institutional mission statement was also considered. The implementation of a nurse-led PC screening tool (NL-PCST) aligns with the mission of the institution, which is "to heal, discover, and educate for longer, healthier lives" (Fairview, n.d.). This intervention has the potential to allow nurses to heal emotionally, and patients to heal by promoting and preserving their QOL. The values at the institution also align with this project which include dignity, integrity, service, compassion, and innovation (Fairview, n.d.). Empowering ICU nurses to advocate for PC

preserves both the dignity and integrity of patients. It also reinforces the service, integrity and compassion of the care that nurses provide their patients. From an innovation standpoint, this new screening tool has the potential to change practice going forward.

Plan for Application of the Evidence

Problem Identification

Based on the literature, there is evidence to support all components of the initial clinical question. Many critically ill patients have PC needs, and these needs often go unrecognized in the ICU setting. This environment has the potential to decrease the QOL for patients and causes great moral distress for ICU nurses. The literature demonstrates that PC has both proven benefits for seriously ill patients and their families, and that it has the potential to reduce moral distress for healthcare providers as well. Additionally, the evidence supports that ICU nurses suffer less moral distress when they feel empowered and are given tools to effectively advocate for their patients. Interventions proposed by the literature include screening ICU patients for PC needs using a trigger-based method as well as providing education about PC within the ICU environment, to allow for a better understanding of how PC aligns with the provision of ICU care.

The clinical question to guide this clinical scholarship project will remain: At a Midwestern, urban, academic medical center (P), do ICU nurses (P) who receive education about the use of PC in conjunction with ICU care and use a screening tool for unmet PC needs (I) have increased knowledge and comfort with PC, feel more empowered to advocate for a PC consult, and impact PC consults ordered for patients meeting evidence-based triggers for PC (O) versus ICU nurses who do not have access to this education and evidence-based screening tool (C)? The education that these ICU nurses will receive will be focused on the benefits of PC use in the ICU

setting, ways that they can implement PC techniques at the bedside, and how evidence-based screening criteria can identify patients who may have unmet PC needs.

Feasibility/Utility

Implementation of this PC-focused project has been thoroughly evaluated and determined to be feasible and is supported by many key stakeholders. The setting in which this project will take place is in the ICU settings (medical, neuro-surgical, and cardiac) of a midwestern, academic medical institution. The literature describes research conducted throughout varied ICU environments, including neurological, surgical, cardiac, and medical critical care settings. At this institution, all of these environments are represented and will be included in the project. This allows for further analysis and stratification of which areas and which patients are best suited for increased PC utilization, which services are or are not providing PC to their patients, and which nurses are benefiting the most from education about PC use in the ICU. See Appendix L for analysis of utility and feasibility.

Supportive leadership. The proposed PC education and NL-PCST intervention at the institution has gained support from key leadership members of the ICU interdisciplinary team. The DNP Project Mentor, the lead PC Advanced Practice Registered Nurse (APRN) at the institution, agrees that a gap exists with the integration of PC for critically ill patients and supports the intervention, specifically for the interventions capability of empowering nurses and reducing the moral distress they experience in the ICU setting.

Additionally, the four ICU nurse managers (NMs) at the institution have agreed to support this project. Some of their feedback included an expression of concern for physician resistance, lack of participation, and the request to see the data broken down by ICU service, rather than by unit separation. The authors took careful consideration of the concerns that were

expressed by supportive leadership and integrated strategies to overcome these potential barriers. Additionally, support has been garnered from the ICU clinical nurse specialists (CNSs). They have both agreed that proposed interventions are feasible and impactful, and have contributed to the preliminary planning stages of this DNP project. They also have agreed to help encourage participation from nursing staff, and assist in getting buy-in from key members of ICU physician team. Furthermore, the online education module will provide nurses with communication tools such as scripting for addressing physician resistance.

To enhance participation in this project there will be drawings for gift cards for nurses that have completed the daily PC screening tool. These gift cards will be provided by the students conducting this project. The NMs will advocate for use of the NL-PCST during rounds, as well as send out weekly reminders (see Appendix W4) and have the charge nurses reinforce use of the daily NL-PCST during change of shift huddles. To address the NMs' request regarding the breakdown of data by service, an area was added to the NL-PCST for nurses to write which ICU service is managing the patient.

Organizational infrastructure. The organizational infrastructure at the institution needs to be taken into consideration when evaluating the feasibility and effectiveness of the proposed intervention. Although PC is underutilized, particularly in the ICU setting, a PC consult service is already in place at the medical institution. This service is comprised of physicians and APRNs with specialty PC training. The PC consult service sees patients throughout the institution as requested by their attending providers. Although the current set of providers on the PC service can likely support an increase in PC consultation requests during the intervention phase, evaluation of the increase in consults and if the service can support that number long-term will be necessary after the project is completed.

Communication strategies. For successful implementation of this project, communication with nurses is immensely important. They will receive correspondence via email with details about the project prior to, during, and after the implementation phase. Moreover, it will be essential for nurses to feel comfortable communicating PC recommendations, based on the screening criteria their patients meet. Communication strategies for this intervention will be discussed in the online education module. Informational flyers will be posted throughout the three ICUs to help reinforce the use of the NL-PCST. Examples of email communications can be found in Appendix W and a draft of the flyer can be viewed in Appendix X.

Benefit versus risk. The benefits of implementing this project are significantly greater than the associated risks. There is minimal risk associated with implementation of this project. There is no direct contact with patients with this intervention, which excludes patient harm. Additionally, there is no protected health information (PHI) that will be obtained from patients' electronic medical records (EMR). We will exclusively be collecting our data from the NL-PCST which will not include PHI. The survey data collected from the nurses will be anonymous, therefore their confidentiality will be maintained. The only institutional financial burden for this project is in printing of the NL-PCST, and stakeholders have already approved these costs. Nurses may experience resistance from physicians when recommending PC based on the NL-PCST. The online learning module will express proper ways to respond to those who oppose the recommended PC consult, as well as techniques for reducing moral distress. Communication with ICU providers regarding the rationale for the project should also mitigate physician push-back to the project.

Patient Preferences

No person gets to live forever, and most will endure some sort of disease or injury that has the potential for suffering at some point during their lifetime. Navigating the medical system can be difficult, particularly when emotions are high and there is a lot at stake. PC has consistently been shown in the literature to improve satisfaction by addressing the patient's and family's need for information and facilitating their active participation in decisions regarding their medical care (Gade et al., 2008). Additionally, PC use in the ICU has been associated with improved QOL for patients, more clearly communicated prognostics, increased emotional and spiritual support, and better mental well-being and support as the patient nears death (Baker et al., 2015). PC use in the ICU has also been shown to lower anxiety for both family members and care providers alike as patients and their proxies have a better understanding of the situation. This promotes less conflict over nonbeneficial care, and reduces provider burnout, enabling them to continue providing optimal care (Baker et al., 2015).

Patient and family goals, which are generally assumed to be the minimalization of suffering and the best QOL as possible, are highly regarded by PC teams. Despite this, some may have misconceptions about PC teams and may be resistant to PC consultation. They may hold false hope or be unwilling to accept when a loved one is nearing death and may be resistant to communicate with any provider who mentions that possibility. They also may be unable to understand the medical information being communicated to them due to a lack of knowledge, a cultural misunderstanding, or simply because they are overwhelmed due to the information being provided from multiple providers on the various multidisciplinary teams (Perrin & Kazanowski, 2015). These perceived patient and family barriers are actually even more indication for a PC consult, as PC teams have been shown to improve communication and increase satisfaction.

The literature clearly shows that PC teams can improve the patient and family experience in the ICU setting, and therefore aligns with patient preferences. Even for those that ultimately resist a PC consult, at a minimum, offering the opportunity for PC is still evidence-based best practice.

Summary of Recommendations

Based on the literature review, as well as consideration of the feasibility and utility of the interventions described above, the interventions considered should be education for nurses on the use of PC in the ICU, as well the use of a trigger-based screening tool. The DNP project interventions will be to provide education to ICU nurses at the institution about the complementary use of PC in the ICU setting, why it is important, how they can provide primary PC to their patients, as well as how to use a criteria-based screening tool to recognize patients with unmet PC needs, so that they can evaluate each ICU patient on a daily basis and advocate for PC, if needed, at daily rounds.

Implementation Plan

Evidence-Based Practice Model

Rosswurm and Larrabee's Model for Evidence-Based Practice Change was used to guide the implementation process. It is a six-step process that uses quality improvement (QI) principles, teamwork tools, and evidence-based translation strategies to implement a practice change (Melnyk & Fineout-Overholt, 2015). This model was chosen because of its integration of QI principles. QI projects seek to improve the processes or outcomes of care that is already being delivered (Melnyk & Fineout-Overholt, 2015). As stated above, PC is already implemented in some form in the majority of large hospitals across the nation, but it still is underutilized. Improving the provision of and access to PC services in the ICU setting is a vital

component of this project, and both evidence-based practice and QI components are needed to accomplish this. Application of implementation strategies to this model are outlined in Appendix M, which displays the process steps required for successful implementation of this DNP project.

Clinical Context

Practice setting. This project will take place at a midwestern, academic medical institution in all three ICUs including the 19-bed Medical ICU, the 16-bed Cardiovascular ICU, and the 27-bed Neurological/Surgical ICU. The supportive leadership of these ICUs preferred this project implemented across each of the ICU units, rather than one, as PC needs are relevant to all critically ill patients.

Participants. The participants in this project will be the ICU nurses at the institution. All nurses actively working on any of the ICU units will be included. ICU nurses excluded from the project will be any who are on a leave of absence, such as a maternity leave, throughout the length of implementation phase.

Beneficiary participants are the patients, as their care may be impacted by this project. During rounds with the interdisciplinary team, the primary participant, the nurse, will notify the ICU provider if the patient has met any of the evidenced-based triggers for having unmet PC needs based on the NL-PCST. These patients may subsequently be offered a PC consult if the provider agrees that it may be useful at the time. Furthermore, the ICU nurses themselves may become beneficiaries as well, if they feel more empowered to advocate for their patients as a result of the education they undergo. Ideally, this empowerment would lead to a lessened moral distress burden.

Education plan. An online education module for the ICU nurses will be created by the authors in collaboration with project mentors. Content that was requested by the ICU Nurse Unit Leaders (NULs) will also be incorporated into the learning module. The education will be provided through the learning management system (LMS), which is an online learning platform that the institution uses for continuing education.

Nurses at this institution do not receive formal PC training, therefore a brief overview of PC and how it can be utilized for ICU patients will be highlighted. Simple primary PC nursing skills as well as communication techniques will be reviewed to enable nurses to incorporate these cares at the bedside. Acknowledging moral distress that ICU nurses experience and reviewing some of the evidence from the literature that supports the use of PC in reducing moral distress will be completed. A brief overview of this project will be discussed in the education module. It will be important to emphasize how this project will be beneficial to nurses and promote a healthy environment where moral distress is reduced, and they feel more empowered to advocate for PC when it is appropriate for their patients. A discussion of the evidenced-based NL-PCST and how it was developed will also be included in the education module.

The goal of this project is not to change physician behavior, but instead to empower nurses. It is possible that nurses will receive some physician resistance in rounds when utilizing the NL-PCST. To assist with redirecting this resistance, communication tools will be included in this education module to help nurses feel supported when advocating for PC using the evidenced-based screening tool. Overall, the education is meant to be informative and to provide ICU nurses with the tools they need to better incorporate PC into caring for their patients.

Nurse-led PC screening tool (NL-PCST). After a thorough review of the evidence, criteria were identified based on the most commonly used triggers for PC in critically ill patients.

All criteria used in the various studies were compiled and listed in Appendix N. These criteria were then evaluated for similarity as well as proven efficacy and grouped thematically. The institution already has automatic PC consults triggered for the following circumstances: patients undergoing extracorporeal membrane oxygenation (ECMO), patients requiring a left-ventricular assist device (LVAD), trauma patients greater than 75 years old, and patients who require a lung transplant. Given that these are already in place, similar criteria were not included in the NL-PCST, as they have pre-determined PC needs.

After grouping the evidence-based criteria from the literature, the authors worked with the DNP Project Mentor to identify which triggers would be most applicable across the ICU settings at this particular institution. The criteria were also vetted by the ICU CNSs, NMs, and the NULs. The most commonly used criteria were identified and the sources for each criterion are further detailed in Appendix O. The following criteria will be included on the NL-PCST:

1. ICU length of stay > 10 days or ICU readmission within the same hospitalization
2. Age > 75 years old with two or more chronic conditions
3. Admitted from a skilled nursing facility, long term acute care hospital (LTACH), or with multiple activity of daily living (ADL) dependencies
4. Mechanical ventilation > 7 days, prior to tracheostomy or percutaneous endoscopic gastrostomy (PEG) placement
5. A perceived need for goals of care discussion by any member of the patient's care team, including the patient and their family

The NL-PCST includes the triggers listed above, and can be found in Appendix P.

Participation and recruitment. To enhance participation in this project, the authors plan to recruit nurse champions from each of the ICUs that would serve as advocates for proper

utilization of the NL-PCST in multidisciplinary rounds. For the nurse champion position there will be no additional work required outside of working their original appointment. This is an opportunity for nurses to enhance their leadership skills and become more involved with extracurricular projects on their units. An incentive for filling this position could be fulfilling a goal to become more involved in project development that was set with their NM. A draft email for recruiting nurse champions can be found in Appendix W2.

Because the education module is not mandatory for nurses to complete, we will be sending weekly emails to nurses to remind them to complete the online module during the four weeks the education module is open. Drafts of reminder emails for the pre-and-post Palliative Care in the ICU (PC-ICU) survey and completion of the education module can be found in Appendix W4. Email drafts for the different phases of the project can be found in Appendix W3. To encourage participation during the survey periods, small incentives will be offered to nursing staff in the form of individually wrapped, pre-packaged snacks.

Informed consent is not required for patients because there is no direct contact with human subjects and there are no associated risks to patients through this project. Furthermore, the literature only identifies benefits of PC for critically ill patients, with no associated risks. A consent template will be present at the beginning of the survey and by completing the survey, the nurses' consent will be implied. NMs will send out the surveys to their nurses, and consent will be obtained as determined by the Institutional Review Board (IRB).

Upon approval of the project proposal, the authors will complete the IRB process for Winona State University (WSU) as well as at the medical institution where the project will take place.

Readiness for Change

Before implementation of this DNP project, a thorough evaluation of the institution's readiness for change was completed. Leadership support at institution was gathered by meeting with multiple stakeholders including the ICU NMs and CNSs. After discussing the clinical problem and the proposed intervention with these stakeholders, they supported the need for increased PC services in critically ill patients and agreed the proposed intervention would be beneficial and influential for future changes across all ICU units. Dr. Langer, a graduate professor at Winona State University (WSU), served as a key stakeholder in this project by advising and providing guidance for needed resources for this project. With the support of key stakeholders and nurse leadership, facilitators and barriers have been identified and a plan to address them has been discussed.

We were not able to directly survey the ICU nurses before implementing this project, as it was determined IRB approval would be required before proceeding. To obtain a general assessment of the awareness of PC and how it is integrated in the ICUs, we conducted a pre-assessment survey that included 6 questions, which were emailed to the NULs on each of the three ICU units (see Appendix W1). The NULs work as charge nurses with additional leadership responsibilities, which include but are not limited to creating activities that promoting inclusivity and camaraderie, scheduling, conducting leadership projects, and routine check-ins with staff. Their input is meaningful as they work directly with the bedside nurses and are aware of education gaps and barriers that may exist within the ICU nurses. The results from the survey can be found in Appendix T.

Based on the responses, 80% of the responses strongly agree and 20% agree that PC is an essential component of care delivery in the ICU. 80% of the responses acknowledged that PC is

utilized appropriately sometimes, and 20% of the responses indicated PC is rarely utilized appropriately. This indicates that an evidence-based trigger tool would be valuable for clearly identifying patients that would benefit from PC. 80% of the responses identified that nurses often perceive a difference between the goals of care of the patient/family and the goals of the healthcare team. To evaluate for any specific PC education needs, the NULs were asked to specify any PC topics they thought would be beneficial for the ICU nurses. Some of the topics identified included clarifying that PC does not indicate EOL, initiating difficult conversations, how PC can be beneficial to families in addition to the patient, and specifying how PC can be utilized outside of patients requiring EOL care. Based on the responses received, it has been determined that this project would be beneficial for the ICU nurses at this institution. There is a perception that PC is both underutilized and implemented too late in the ICU setting. Participants identified that using an evidence-based PC screening tool would be an appropriate way to identify patients who may have PC needs along the spectrum of their illness, not just at EOL.

Facilitators and barriers. Potential facilitators and barriers of this DNP project are listed in Appendix Q. Despite the barriers that exist, the literature provides evidence that enhanced inclusion of PC in the ICU setting is immensely beneficial for patients and families, and that it may have benefits for healthcare providers, so continuing forward with this project is recommended.

Barriers will be addressed prior to implementation, as well as continuously during the project. The largest perceived barrier is provider reluctance towards PC involvement, as well as towards nurse-initiated PC recommendations. To facilitate provider endorsement of this project, one of the ICU CNSs and project mentors has agreed to champion this project with Dr. Chippman, the medical director of the ICUs. Furthermore, we will communicate rationale for the

project as well as provide details and respond to questions or concerns that he has prior to implementation.

The triggers on the NL-PCST may be another barrier. The initial education module will help nurses understand the triggers and how to use them. The triggers and rationale for their selection will be provided to both the PC and ICU provider teams. Should they have any major objections to the compiled list, their opinions will be taken into consideration.

Education for nursing staff is another way to contend with multiple barriers. During the education phase of the project, the nurses will receive information about PC use in conjunction ICU care, which will help them to understand why it is beneficial for patients, and ideally facilitate nurse buy-in to this project. Additionally, they will be informed about project procedures. They will learn that the NL-PCST they are being asked to complete will be discussed in daily rounds in addition to the existing rounding tool. By affirming the importance of utilizing both tools during daily rounds, the hope is that on the units where the existing rounding tool is underutilized, this project will help reinvigorate staff participation with the current rounding tool and implementation of NL-PCST. Additionally, to encourage overall participation throughout the project, several incentivizing measures, such as gift cards and treats, will be provided. While barriers to this project exist, putting in place several steps prior to and during the implementation phase should optimize overall success.

Measurement Methods and Tools

Outcomes. The overarching goals of this project are to decrease ICU nurse moral distress and to increase their knowledge and comfort surrounding PC in the ICU setting. The practice change to achieve these goals includes an educational intervention about how PC complements critical care and the use of an evidence-based PC screening tool. The outcomes chosen to measure the impact

of this project include the following: the knowledge the nurses have regarding integration of PC in ICU patient care; the level of empowerment they feel advocating for PC for their patients; and the comfort they feel recognizing patients with unmet PC needs. Each of the outcome goals are specific, measurable, attainable, relevant, and timely (SMART).

For each of the outcomes, specific indicators will be assessed through pre- and post-implementation PC-ICU survey data and results of the NL-PCST. The levels of empowerment will be measured through specific questions on the PC-ICU survey based on a Likert scale, as well as by responses on the NL-PCST. On the screening tool, it is asked if the patient meets criteria for a PC consult, and whether one was requested or not. Ideally, we would want to see nurses acting on their senses of empowerment and advocating for a PC consult 100% of the time it is appropriate. Furthermore, the percentage of PC consults placed after being advocated for as a result of the screening tool will be evaluated. Knowledge and comfort with PC utilization in the ICU setting will also be assessed via pre- and post-implementation PC-ICU survey questions. Furthermore, qualitative knowledge regarding the nursing experience of advocating for PC during rounds will also be considered by reviewing the comment boxes on the NL-PCST.

These outcomes were deemed attainable via analysis of the existing literature about PC utilization in the ICU, empowerment, and nurse moral distress and through discussions with relevant stakeholders at our facility. They were also identified to be relevant and appropriate in this setting by stakeholders and project mentors. The timeframe in which these outcomes are to be measured is over the 12-week project period.

Instrument. To measure the impact the PC education module and the NL-PCST has on nurse knowledge and comfort with PC and empowerment advocating for a PC consult, the PC-ICU survey was created by the authors. The survey is composed of four demographic questions, and

14 survey questions that evaluate empowerment, comfort, and knowledge regarding integration of PC in ICU patient care. The survey consists of questions based on a Likert scale, true or false questions to evaluate knowledge, and various free-text, open-ended questions to obtain qualitative data. Face and content validity of this tool were evaluated by administering the PC-ICU survey to a group of 10 nurses. All participants expressed that the questions assessed the concepts that they were intended to evaluate and were relevant to the subjects at hand. A test-retest reliability could not be established as the project design did not allow for re-evaluation at a later date. The PC-ICU can be found in Appendix S.

The NL-PCST used in this project was created by the authors using the most common PC triggers for critically ill patients found in the literature review and is detailed above. This is not a validated tool, however careful consideration of the patient population and comorbidities common among patients in the medical, neurological/surgical, and cardiac ICUs was used when this tool was being developed. The selected triggers are evidence-based. Following the PC triggers assessment, the nurses are asked if the patient met triggers, if they advocated for a PC consult, and if one was ordered. The last part of the tool is an open-ended question to gather any insight on the nurse's experience using the tool and if the team declined the PC recommendation, to detail the reason why. This tool will be used to determine the number of patients that met triggers for PC, what triggers were most frequently met, and if empowerment is indicated by nurses through increased advocation for PC consults.

The outcomes that are being measured will be calculated based on the type of data on the NL-PCST, which is divided into ordinal and nominal data. The Likert scale questions, which are considered ordinal data, will be calculated based on the numeric value given for each item on the scale (ie: Strongly Disagree (1), Disagree (2), Neutral (3), Agree (4), and Strongly Agree (5)).

This information will be useful for calculating the median and interquartile range. The dichotomous questions are considered nominal data, encompassing questions 8 through 13. We will compare the proportion of respondents from the pre- and post-implementation PC-ICU surveys to evaluate if the education and NL-PCST were beneficial.

Data Collection Process and Logistics

Processes for rounding on all patients are in existence in all the ICUs at the institution. Each morning, the ICU multidisciplinary team comes together to discuss each patient. During this time, the residents present each patient, including details of the patient's past medical history, hospital course, changes that occurred over the last 24 hours, and a tentative plan for the patient moving forward. The nurses' input is discussed using a comprehensive rounding tool which is completed daily by the night shift nurse caring for the patient each night and passed off to the day shift nurse. The rounding tool is utilized in rounds to discuss each patient and address any concerns the nurse would like to discuss with the interdisciplinary team. This DNP Project will utilize this existing rounding structure.

During the implementation phase, the NL-PCST will be included with the daily rounding tool, which are both paper forms. This process will be detailed in the online learning module that the ICU nurses will be required to complete. The day shift nurse will bring the form to rounds for discussion. The bedside nurse will be responsible for stating if the patient meets criteria for a PC consult or not during ICU rounds. To avoid redundancy for patients that already have a PC consult, an EMR-based sticky note will be utilized in the patient's chart stating that the patient has already had a PC consult. After rounds, the nurse will record details about his or her rounding experience and discussion of PC with the multidisciplinary team on the NL-PCST. The nursing station technicians (NSTs) will be responsible for collecting the NL-PCST every

night and placing it in a lockbox at the charge nurse's desk. The authors will be responsible for collecting the NL-PCSTs from the lockbox each week, ensuring that they remain in a secure location to keep the information being analyzed confidential. Data collected from the screening tool will be uploaded into a computer database that will be password protected.

Although many people will be using the NL-PCST, the data being collected is largely objective, with information coming from the patient's EMR. The only subjective criteria are if there is a perceived need for a PC consult, and this can come from the nurse, the patient or family, or provider. There is room for commentary, but this will mainly be used for qualitative data about the nursing experience. Interrater reliability should be consistent due to the overall objectivity of the tool.

This process of nurses completing the NL-PCST and addressing PC needs at daily rounds will occur for four weeks. A timeline for this interventional phase, along with others, can be reviewed in the timeline in Appendix U.

Plan for Data Analysis

After data is collected, a consultation with a WSU statistician will be conducted to determine which statistical analyses are most relevant. While some qualitative data may be looked at via the areas for open-ended commentary from nurses on the PC-ICU survey as well on the NL-PCST, most of the data that will be assessed will be quantitative in nature.

Quantitative data regarding the number of PC consults driven by the NL-PCST will be obtained from the tool. The NL-PCSTs will be collected at the end of each week during the implementation phase and the DNP students will then evaluate each tool.

The pre-implementation and post-implementation PC-ICU surveys will be analyzed to evaluate the differences in nursing comfort, knowledge, and empowerment after the intervention

is put into place. Levels of moral distress and empowerment are of particular interest and will be compared through statistical analysis as suggested by the WSU statistician.

Budget/Timeline/Resources

Cost analysis and budget. One of the most feasible pieces of this project is that it is cost-effective. Costs for the medical institution are minimal. The only foreseen cost is the printing of the NL-PCST and this was already approved by project stakeholders. The online education module is not mandatory, therefore there are no costs to the institution for nurses to complete this module. There will be small costs supported by the authors for incentives such as snacks for participation in the pre-and-post implementation surveys, and gift cards to increase participation in use of the NL-PCST. A gift in kind statistician provided by WSU will be used to help analyze the data collected after completion of the implementation phase of this project. Anticipated personal costs for incentives are budgeted at $100 total, with $75 being allocated for gift cards, and the remainder for snacks. By incorporating PC into patient's care sooner, it is thought that there is a potential for cost avoidance due to decreased length of stay in the ICU and increased patient experience.

Timeline. A Gantt chart is included in Appendix V as a tentative outline for the project phases. The phases outlined are an estimate and are subject to change.

Consultants and external support. There are areas in which the students will need external support. One area is the creation of the online education module through the institution's learning module system. Existing stakeholders, such as the ICU CNS, have already committed to aid with this process.

Another consultant required will be a statistician for data analysis after the implementation phase is complete. WSU statisticians have been made available for this purpose

and will be utilized later in the project. Discussion with faculty advisors will be required to further guide the students in how to acquire the support of a WSU statistician.

Implementation resources. There are many resources needed for successful implementation of this DNP project. Physical resources will be required for creating the online LMS include a meeting location with internet accessibility, software access for creating the LMS, and a computer with a web-camera. For implementation of the NL-PCST, the physical resources needed will include a computer, printer, paper, and pen, and a marked box to for completed NL-PCSTS. Many staff resources will also be needed for implementation of this project including nurses, NMs, NSTs, CNSs, and providers. Bedside nurses within all ICUs will be instrumental in maintenance of the project by incorporating the NL-PCST into interdisciplinary rounds for each patient. Ongoing support from NMs will be important as they will encourage participation and help keep nurses accountable for completion of the NL-PCST. NSTs will be responsible for collecting the completed screening tools and returning them to the designated box, as well as replacing it with a new NL-PCST for the following day. Continued support from the CNSs will be required for providing guidance for creating the LMS, as well as support with the overall implementation process. They will provide valuable feedback that will be useful for incorporating changes and increasing effectiveness of this project. Providers will also be an important resource for implementation of the NL-PCST. They will need to be aware that nurses will be considering the evidence-based PC triggers and be open to discussion of their patients' PC needs.

Summary Plan for Implementation

To implement this DNP project, an online learning module created through the LMS about the use of PC in conjunction with ICU care as well as how to use the NL-PCST will be

created with the assistance of the ICU CNSs at the institution, as well as the DNP Project Mentor. While this is being finalized, all ICU nursing staff will be asked to complete the pre-implementation PC-ICU survey during a two-week window. After the survey phase, the nurses will be required to complete the LMS module during a 4-week period. After this period has ended, the screening phase will begin, and nurses will be instructed to utilize the NL-PCST for a period of four weeks. The authors will collect data throughout this process. After the four-week screening period has ended, the nurses will again be asked to take a post-implementation PC-ICU survey during a two-week survey phase. The authors will then consult with a WSU statistician for guidance on statistical analysis of the data. Lastly, the students will detail the results of their project in a manuscript.

Conclusion

As medical technology has advanced, healthcare providers have been able to keep seriously ill people alive for longer amounts of time with a variety of medical interventions. Although modern medicine can keep people alive, their QOL may be compromised due to the aggressive interventions provided in the ICU setting. PC has emerged as a core component of comprehensive, quality care because the specialty focuses on QOL versus quantity. PC has proven benefits for patients and families. However, in the ICU setting, PC is not as readily utilized as it is in other medical settings of care. Experts state that increasing PC use in the ICU setting has important positives consequences for patients, families, and healthcare providers. The evidence suggests that there are ways to increase the acceptance of PC in the ICU setting, including more education, and the use of trigger-based screening tools to ensure that patients with unmet PC needs are being evaluated. Additionally, the evidence suggests that ICU nurses suffer high rates of moral distress related to the stresses of their job, but that empowerment

counteracts these negative effects. Allowing nurses to use an evidence-based tool to advocate for their patients with unmet PC needs gives them a voice in the ICU setting. Theoretically, this aligns with Murray's TMPC, which emphasizes the importance of patient and family-centered care in the ICU setting, which she states is accomplished through the provision of PC. Murray's model states that if patients and their families can effectively ask for care that aligns with their values, they can maximize their QOL. This, in turn, has positive effects on moral distress for nursing staff as well.

Given the evidence supporting PC use in the ICU setting, the DNP project will be focused on using ICU nurses to champion PC utilization in their work environments. The project will utilize a pre-implementation and post-implementation survey to assess nurses' comfort and knowledge about PC in the ICU setting, as well as evaluate levels of moral distress. There will be a learning module to increase nursing awareness of the reasons for PC use in the ICU setting, as well as how to use a criteria-based screening tool. Then, the tool will be used during daily rounds to assess all ICU patients for PC needs during a screening phase. Lastly, data will be gathered, analyzed, and published for dissemination.

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Appendix A

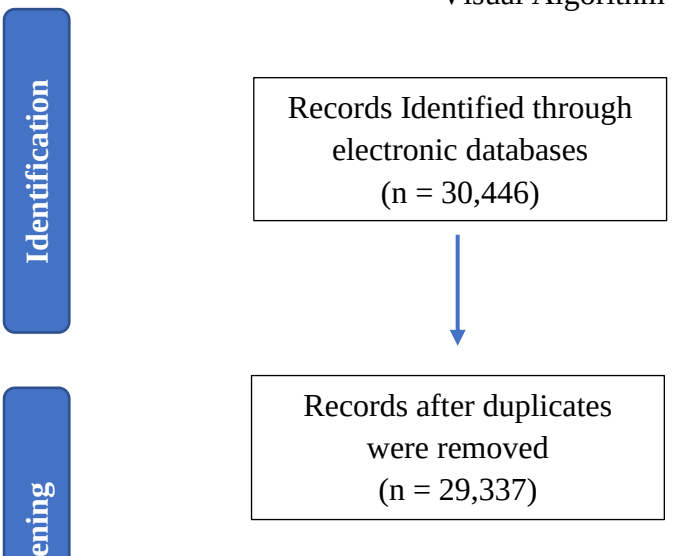
Databases Searched and Data Abstraction

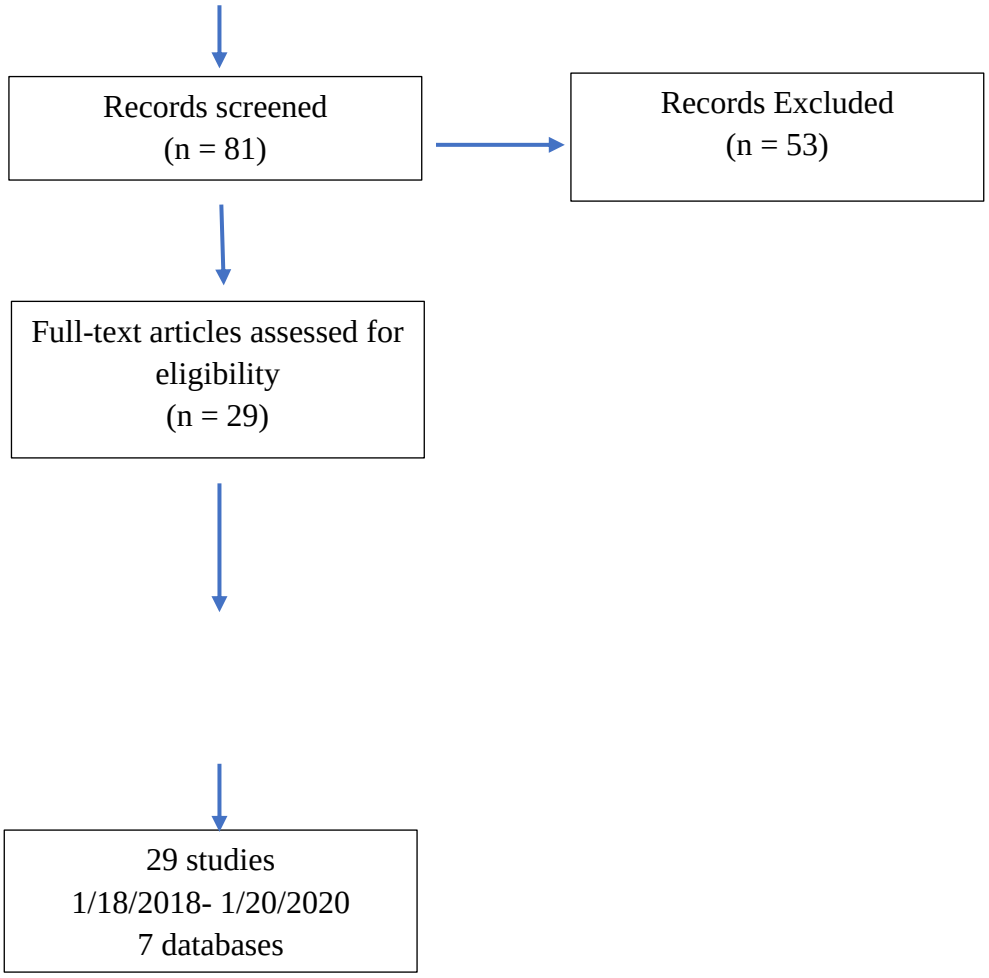
Date of Search	Keyword Used	Database/Source Used	# of Hits		
			Listed	Reviewed	Used
1/18/18	Role of nurses, palliative care	Google Scholar	16,800	3	1
1/21/18	Early palliative care	CINAHL Complete	1,372	13	2
3/10/18	Palliative care, nursing theory	EBSCOHost	2,971	3	2
4/6/18	Palliative care, end of life care	EBSCOHost	477	2	1

4/6/18	Palliative care timing	CINAHL Complete	330	3	1
4/6/18	Palliative care, patient satisfaction	PubMed	2,301	1	1
10/31/18	Palliative care trigger	CINAHL Complete	127	4	3
11/2/18	Palliative care trigger	PubMed	127	2	1
11/2/18	Palliative care trigger	ScienceDirect	529	3	2
11/10/18	Palliative care, trigger	OVID	1944	4	2
11/15/18	Proactive palliative care	MEDLINE	18	4	1
05/28/19	ICU, intensive care unit, critical care, nurse empowerment, palliative care	CINAHL Complete	13	10	2
05/29/19	ICU, intensive care unit, critical care, moral distress, nurse, nurses, nursing	CINAHL Complete	963	3	1
06/03/19	ICU, moral distress	PubMed	177	5	1
06/03/19	Nurse empowerment, ICU, intensive care unit, palliative care	PubMed	7	3	1
06/03/19	Early palliative care, nurse, nurses, ICU, intensive care unit	PubMed	26	2	1
06/19/19	Palliative care, nurse confidence, ICU, intensive care unit, critical care	CINAHL Complete	33	5	1
06/22/19	IPAL ICU	OVID	4	2	1
10/11/19	Moral distress, systematic review, meta-analysis	PubMed	29	3	1
10/11/19	Palliative care, systematic review, meta-analysis	PubMed	1606	4	1
10/11/19	Palliative care clinical practice guideline	EBSCOHost	592	2	2
01/20/20	Moral distress, empowerment, nurses	CINAHL Complete	42	3	1

Appendix B

Visual Algorithm of Search Strategy




Records screened
(n = 81)
Records Excluded
(n = 53)
Full-text articles assessed for eligibility
(n = 29)
29 studies
1/18/2018- 1/20/2020
7 databases

Appendix C

Literature Review Table

No.	Citation / Search Engine Used	Purpose/ Objectives/ Description of Intervention	Study population/ Sample/ Setting	Study Design/ Methods/ Major Variables/ Instruments and Measures	Result(s)/ Main Findings	Implications/ critique	Themes/ Comments	Level of Evidence
1	Abbasi, S., Ghafari, S., Shahriari, M., & Shahgholian, N. (2019). Effect of moral empowerment program on moral distress in intensive care unit nurses. *Nursing Ethics, 26*(5), 1494-1504. doi: 10.1177/0969733018766576	To provide a moral empowerment program to reduce moral distress in nurses working in ICUs	n= 60 nurses working in adults' intensive care unit wards of Al-Zahra teaching hospital of Isfahan University of Medical Science (Iran)	RCT Hamric's Moral Distress Scale (2012) used 1 control, 1 experimental group Survey tool measuring moral distress completed prior to, 2 weeks after empowerment intervention for experimental group, and 1 month after by all nurses Intervention= 2-day (12 hr total) workshop, with 5 parts: 1. Defining, recognizing moral distress 2. Identifying consequences of moral distress 3. Training strategies to overcome moral distress based on the literature 4. Sharing personal experiences and applying strategies to overcome moral distress 5. Dissemination of pamphlets/resources for moral distress management	Moral distress most prevalent phenomena in nursing 67% ICU nurses experience moral distress, more than other specialties, health providers, physicians No change in moral distress before, 2 weeks after, or 1 month after for control group No significant change in moral distress score 2 weeks after intervention in experimental group, but significant decrease in moral distress 1 month after ($p < 0.05$)	Study conducted in Iran, and environment/work culture may differ from the ICU environments of the US Moral distress has many implications for nurses' well-being and longevity in their career, as well as for their patients	Moral distress Empowerment of ICU nurses Education/workshops	II

No.	Citation / Search Engine Used	Purpose/ Objectives/ Description of Intervention	Study population/ Sample/ Setting	Study Design/ Methods/ Major Variables/ Instruments and Measures	Result(s)/ Main Findings	Implications/ critique	Themes/ Comments	Level of Evidence
2	Altaker, K.W., Howie-Esquivel, J., & Cataldo, J.K. (2018). Relationships among palliative care, ethical climate, empowerment, and moral distress in intensive care unit nurses. *American Journal of Critical Care*, *27*(4), 295–302. https://doi-org.wsuproxy.mnpals.net/10.4037/ajcc2018252	To evaluate relationships between ICU nurses' moral distress, perceived psychological empowerment, ethical climate of the ICU, and access to PC	n=238 critical care nurses from a national database completed a web-based survey	Descriptive correlational design ICU nurses took an online survey which consisted of three instruments A 21-item scale to evaluate moral distress known as the Moral Distress Scale-Revised (MDS-R) Psychological Empowerment Index (PEI) that includes 12 statements involving participants self-perception A 26-item scale with 5 domains that evaluate nurses' relationships with patients, peers, physicians, managers, and the hospital known as the Hospital Ethical Climate Survey (HECS), and a PC delivery questionnaire	Mean MDS-R score was moderately high and had correlations with empowerment ($r = .145$; $p = .02$) and ethical climate scores ($r = -.354$; $p < .001$)	There is not a lot of research to evaluate the relationship between access to PC and moral distress in ICU nurses	Moral distress in relation to nurse empowerment Moral distress in the ICU	VI

No.	Citation / Search Engine Used	Purpose/ Objectives/ Description of Intervention	Study population/ Sample/ Setting	Study Design/ Methods/ Major Variables/ Instruments and Measures	Result(s)/ Main Findings	Implications/ critique	Themes/ Comments	Level of Evidence
3	Asayesh, H., Mosavi, M., Abdi, M., Masoud, M. P., & Jodaki, K. (2018). The relationship between futile care perception and moral distress among intensive care unit nurses. *Journal of Medical Ethics and History of Medicine, 11*(2). Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6150918	To evaluate the relationship between futile care perception and moral distress in ICU nurses	n=117 ICU nurses of Qom hospitals in 2016	This was a cross-sectional study with a descriptive-correlational design The survey instruments used included the 17-item Futile Care Perception Questionnaire Jameton's Moral Distress 31-item questionnaire	Univariate regression demonstrated that as nurses' perception of futile care and work experience increased, their moral distress was increased significantly ($p = .03$; $p = .02$)	There is an association between moral distress and futile care and work experience, which is an indicator for interventions that are needed to reduce moral distress in ICU nurses	ICU nurses and moral distress	VI

No.	Citation / Search Engine Used	Purpose/ Objectives/ Description of Intervention	Study population/ Sample/ Setting	Study Design/ Methods/ Major Variables/ Instruments and Measures	Result(s)/ Main Findings	Implications/ critique	Themes/ Comments	Level of Evidence
4	Aslakson, R., Cheng, J., Vollenweider, D., Galusca, D., Smith, T. J., & Pronovost, P. J. (2014). Evidence-based palliative care in the intensive care unit: A systematic review of interventions. *Journal of Palliative Medicine*, *17*(2), 219–235. https://doi-org.wsuproxy.mnpals.net/10.1089/jpm.2013.0409	Purpose was to conduct a systematic review to identify evidence-based interventions that improve the delivery of palliative care in the adult ICU	n= 37 studies detailing 30 different palliative care interventions from years 1988-2011	Systematic Review Five RCTs, 1 single matched case-control study, 31 pre-test/posttest or longitudinal cohort studies	13 of 21 interventions had decreased ICU LOS with palliative care 8 of the 14 interventions that measured hospital LOS showed a decrease in hospital LOS with integration of palliative care	For future research it would be beneficial to evaluate proactive palliative care in ICU compared to standard ICU care in a well-designed, well-powered, multicenter controlled trial The studies included in this review all take place in the ICU setting. Our project will take place in three different ICUs which makes the results more generalizable The heterogeneity of interventions made it difficult to statistically compare studies, which make recommendations from results of the findings lack value	This study shows that integration of palliative care in ICU patients only adds additional benefits to patients and does not result in any negative outcomes.	I

No.	Citation / Search Engine Used	Purpose/ Objectives/ Description of Intervention	Study population/ Sample/ Setting	Study Design/ Methods/ Major Variables/ Instruments and Measures	Result(s)/ Main Findings	Implications/ critique	Themes/ Comments	Level of Evidence
5	Aslakson, R. A., Curtis, J. R., & Nelson, J. E. (2014). The changing role of palliative care in the ICU. *Critical Care Medicine*, *42*(11), 2418–2428. https://doi-org.wsuproxy.mnpals.net/10.1097/CCM.0000000000000573	To review the evidence of opportunities to improve PC for critically adults, summarize strategies for ICU PC improvement, and identify resources to support implementation	ICU settings	Literature review completed of peer-reviewed articles, consensus statements, guidelines, and reviews published up until January 2014 Areas covered: opportunities for physical and emotional symptom management, improved communication and support for patients/families, specific models and interventions for improving ICU PC, available resources for ICU PC improvement, and on-going challenges and opportunities for future research	PC=essential component of comprehensive care for ICU patients Research-ICU survivors suffer physical, psychological symptoms, impairment of function and cognition, called post-intensive care syndrome Prevalence of depression in ICU survivors 14 months after discharge 28% Caregivers have anxiety, depression, PTSD, complicated grief Healthcare providers suffer burnout, depression, moral distress, conflict Many barriers to integration, particularly in surgical settings Surrogate decision-making problematic reality in the ICU, often underinformed, communication stressful Ways to improve PC: use core PC components as measures of ICU quality, triggers are met by 14-20% of patients and can identify needs, improved family communication, education on communication, ICU diaries, order sets, death rounds, more education for all providers about PC	Provides tables and resources regarding literature about PC utilization in the ICU Mentions healthcare provider burnout Repeatedly emphasizes need for education and training, particularly highlighting in the surgical ICU setting, where culture emphasizes interventions Notes that correct triggers as well as PC implementation will be subject to the needs and culture of individual settings	Expert opinion Benefits of PC in ICU Barriers to PC	VII

No.	Citation / Search Engine Used	Purpose/ Objectives/ Description of Intervention	Study population/ Sample/ Setting	Study Design/ Methods/ Major Variables/ Instruments and Measures	Result(s)/ Main Findings	Implications/ critique	Themes/ Comments	Level of Evidence
6	Baker, M.A., Luce, J., & Bosslet, G.T. (2015). Integration of palliative care services in the intensive care unit: A roadmap for overcoming barriers. Clinics in Chest Medicine, 36(2015), 441-448. http://dx.doi.org/10.1016/j.ccm.2015.05.010	To discuss the barriers to PC integration into the ICU setting as well as provide a considerate, stepwise approach	ICU settings	Discusses benefits, barriers, screening tools, PC resources, and steps for integration Steps identified: 1. Garnering local support from thought leaders 2. Recruitment and development of a hospital PC team 3. Initiation of PC services into ICU culture (pilot education, screening tools) 4. Full integration of PC services with ICU daily workflow	Benefits to PC include improved quality of life, understanding of clinical situation/prognosis, increased emotional/spiritual support, improved mental well-being for all involved, improved satisfaction, lowered anxiety for healthcare providers and family members, more value-aligned care, less conflict, reduced provider burnout Healthcare cost benefits include reduced costs, decreased LOS, less readmissions, cost avoidance through fewer tests, procedures, and downgrading patients to lower levels of care, less resource utilization PC not associated with increase in mortality Barriers include unrealistic expectations about prognosis and effectiveness of ICU treatment, inability of patients to partake in discussions, poor training in communication skills, too many demands for clinician's time, poor understanding of PC	Summarizes benefits of PC and barriers to implementation Discusses provider benefits of PC as well Mentions poor reimbursement of provider time for lengthy family meetings, so AMA and IOM have called on Medicare/Medicaid to reimburse time spent on end-of-life conversations, POLST paperwork and family/patient education Table of resources for PC integration Recommended measuring number of PC consultations driven by education/screening, staff attitude surveys, patient satisfaction surveys, staff satisfaction surveys	Expert opinion Education noted to be an important component of increasing PC utilization, as well as piloting screening tools/triggers Has tables with useful options for education development in DNP project	VII

No.	Citation / Search Engine Used	Purpose/ Objectives/ Description of Intervention	Study population/ Sample/ Setting	Study Design/ Methods/ Major Variables/ Instruments and Measures	Result(s)/ Main Findings	Implications/ critique	Themes/ Comments	Level of Evidence
7	Braus, N., Campbell, T.C., Kwekkeboom, K.L., Ferguson, S., Harvey, C., Krupp, A.E., Lohmeier, T., Repplinger, M.D., Westergaard, R.P., Jacobs, E.A. Roberts, K.F., Ehlenbach, W.J. (2016). Prospective study of a proactive palliative care rounding intervention in a medical ICU. *Intensive Care Medicine, 42*(1), 54-62. doi: 10.1007/s00134-015-4098-1	To evaluate the effects of a PC intervention on clinical and family outcomes, and PC processes	Patients in a 24- bed ICU at a 566-bed academic medical center in the Midwest between June 2013-June 2014 n=100 control patients, n=103 intervention phase patients	Quasi-experimental, pre-post intervention 2 investigators screened patients to identify those with 1+ trigger criteria Criteria: Metastatic/incurable malignancy, LOS >10 days before ICU admit, mechanical ventilation >7 days, ICU LOS >14 days, 80 years old with 2+ chronic diseases, s/p cardiac arrest, cerebral hemorrhage requiring mechanical ventilation, ICU admit from long term care facility PC clinician informed of patients meeting trigger, then he/she reviewed EMR, and participated in AM rounds with ICU team. Informed team of triggers and made recommendations for these patients PC integrated, not officially consulted	Mortality rate unchanged- 28% pre-intervention, 27% post Time to family meeting 41% shorter ($p < .001$) Adjusted LOS in hospital significantly shorter ($p < .001$) Adjusted for deaths in hospital, LOS 19% shorter ($p = .043$) Mortality rate unchanged- 28% pre-intervention, 27% post Time to family meeting 41% shorter ($p < .001$) Adjusted LOS in hospital significantly shorter ($p < .001$) Adjusted for deaths in hospital, LOS 19% shorter ($p = .043$) PTSD symptoms present in 9.1% of family respondents in intervention group vs. 20.7% prior to intervention ($p = .09$) Family depressive symptoms, satisfaction, and quality of death not significantly different	PC component built into rounding intervention, so no PC consult needed. Directly given based on trigger criteria Mortality unchanged for usual care vs. intervention group- indicative that PC does not equate to impending death as some may think Gives evidence for more integrated PC model based on triggers, not consults Criteria adapted from Norton et al. study Authors hypothesize that time to family meetings may have led to decreased LOS and identification of goals of care	Does not provide information related to stated outcome (PC consults) Multiple exploratory statistical analyses done to adjust for potential confounders to achieve statistically significant results (i.e. LOS not originally significant, adjusted result was) Triggers	III

No.	Citation / Search Engine Used	Purpose/ Objectives/ Description of Intervention	Study population/ Sample/ Setting	Study Design/ Methods/ Major Variables/ Instruments and Measures	Result(s)/ Main Findings	Implications/ critique	Themes/ Comments	Level of Evidence
8	Browning, A.M. (2013). Moral distress and psychological empowerment in critical care nurses caring for adults at end of life. *American Journal of Critical Care*, *22*(2), 143–151. https://doi-org.wsuproxy.mnpals.net/10.4037/ajcc2013437	To determine the relationship between moral distress, psychological empowerment, and demographic data in critical care nurses caring for patients at the end of life	n=277 critical care nurses on the American Association Critical Care Nursing (AACN) email list Inclusion criteria: must be a critical care nurse and must have experience with caring for a dying adult patient in the ICU	Cross-sectional descriptive survey design A 32-item Moral Distress Scale (MDS-32) survey The 16-item Psychological Empowerment Instrument (PEI) Demographic data survey	Psychological empowerment was a significant predicator of moral distress frequency ($p < .01$)	Providing psychological empowerment to ICU nurses reduces moral distress The study for our DNP project will take place at one inter-city hospital facility that includes four ICUs, and the setting in this study involves nurses from multiple hospitals Although the survey tools used in this study had high reliability and validity, they would not be feasible for our project because of the concern for low nurse participation Sample bias may exist because gender, nor geographical area in which facilities nurses practiced in was not taken into consideration. When implementing our pre- and post-intervention comfort and knowledge surveys, gender will be part of the demographic data	There is a significant correlation between providing psychological empowerment to nurses and reducing moral distress. This supports that providing nurses with empowerment tools is essential for decreasing moral distress and burnout	VI

No.	Citation / Search Engine Used	Purpose/ Objectives/ Description of Intervention	Study population/ Sample/ Setting	Study Design/ Methods/ Major Variables/ Instruments and Measures	Result(s)/ Main Findings	Implications/ critique	Themes/ Comments	Level of Evidence
9	Cox, S., Handy, J.M., & Blay, A. (2012). Palliative care in the ICU. *Journal of the Intensive Care Society, 13*(4), 320-326. https://doi.org/10.1177/175114371201300411	To review the role of PC in the ICU setting	ICU environment	Discusses identifying patients at end-of-life, involving patients, families, providers in decision-making, ethical issues Proposes integrated model of ICU and PC APACHE scores not useful in end-of-life decision making	Majority of patients (up to 95%) unable to participate in treatment discussions Relatives only correctly identify patient preferences 60% of the time Effective, frequent, and timely communication with family increases satisfaction Improved collaboration between nurses/providers leads to increase in satisfaction, shared decision-making reduces the burden for senior physicians Withholding vs. withdrawal of treatment should be considered-withdrawal more emotional. All decisions should be made in consideration of benefit vs. burden The ethical principle of the double effect occurs when death occurs as a result of medicating to control symptoms at the end of life PC useful in symptom management Family and ICU staff require bereavement after death- staff need to have their emotional needs addressed to prevent burnout. Collaborative decision-making expected to reduce staff stress.	Highlights importance of nurse in making decisions Discusses many different benefits of PC in the ICU	Expert opinion Shared decision-making	VII

No.	Citation / Search Engine Used	Purpose/ Objectives/ Description of Intervention	Study population/ Sample/ Setting	Study Design/ Methods/ Major Variables/ Instruments and Measures	Result(s)/ Main Findings	Implications/ critique	Themes/ Comments	Level of Evidence
10	Creutzfeldt, C.J., Engelberg, R.A., Healey, L., Cheever, C., Becker, K.J., Holloway, R.G., & Curtis, J.R. (2015). Palliative care needs in the Neuro-ICU. *Critical Care Medicine, 43*(8), 1677-1684. doi: 10.1097/ccm.0000000000001018	To encourage the ICU team to identify PC needs for patients and their families and potential ways to meet those needs To determine the prevalence of unmet PC needs and to explore the effect of a palliative needs screening tool (PNST)	Single 30-bed neurological ICU (neuro-ICU) at a large academic hospital in the Pacific Northwest n=262 patients admitted from September-November 2013 n=132 patients to service using PNST, n=130 to service not using tool	Pilot, quality improvement project- parallel-group prospective cohort design Critical care team works with 2 neuro-ICU teams to manage patients, admit patients every other day PNST tool used during daily rounds with 1 neuro-ICU team. Team reviewed questions for all patients, then allowed to discuss/decide on PC team involvement/needs Screen questions: 1) Does the patient have distressing physical/psychological symptoms? 2) Are there specific social/support needs for patient/family? 3) Have goals of care been identified and are treatment options matched with patient-centered goals? 4) Are there disagreements with teams, family, or between those? Variables: LOS, mortality, social worker/spiritual care/psychologist provider involvement, PC provider involvement, family care conference documentation, and code status at death or discharge	Unmet PC needs identified in 62% of patients Most common need identified was social support (53%), then goals of care clarification (28%) PNST positive group more likely to have family conference documented (p = .019) PNST positive group had more PC consultations, but not significant (p = .056) No significant differences in involvement of social work, spiritual care, psychologists Compared screened patients to previously published triggers (from Norton et al.)- 46.3% met triggers (33/37 met brain hemorrhage requiring mechanical ventilation criterion) PNST positive group had more deaths (p = .03) or were discharged with comfort cares (p = .01) PNST positive group had longer LOS in hospital (p = .002) and ICU (p = .001)	Overlap of Norton et al. triggers- not surprising many met criterion regarding hemorrhage as it is a neuro-ICU- no statement as to other criteria met (i.e. Age and comorbidities) Authors hypothesized that perhaps they did not have statistically significant higher amount of PC consultations because the neuro-ICU team able to meet most of the needs of patients and did not require specialist PC care- did not look at patient satisfaction outcomes, symptom management, so unclear if this is true	Screening process led to more consultations (but not significant), identification of needs Correlated with other studies and identified triggers Maybe some author bias towards not needed PC specialist involvement-stated that neuro teams could handle all of patient needs Goals of care clarification only needed 28% of time. Unclear how extensively neuro teams discussed goals of care with patients/families and maybe only utilized PC for complex situations	IV

No.	Citation / Search Engine Used	Purpose/ Objectives/ Description of Intervention	Study population/ Sample/ Setting	Study Design/ Methods/ Major Variables/ Instruments and Measures	Result(s)/ Main Findings	Implications/ critique	Themes/ Comments	Level of Evidence
11	Fedel, P., Joosee, L.L., & Jeske, L. (2013). Use of the Palliative Performance Scale version 2 in obtaining palliative care consults. *Journal of Clinical Nursing, 23*, 2012-2021. doi: 10.1111/jocn.12457	To examine whether an educational intervention and implementation of a validated prognostication tool can improve ICU nurses' knowledge and comfort of PC	ICU unit at Midwest tertiary hospital Presurvey began in August 2012 n=23 nurses presurvey, 16 nurses postsurvey	Pretest-posttest design Survey to assess nurses' knowledge about PC and comfort in identifying patients with needs and requesting consults given pre- and post-intervention Education given on PC and the use of the Palliative Performance Scale version 2 (PPSv2) PPSv2 measures functional status in end-of-life patients, includes ambulation ability, oral intake, level of consciousness	Overall increase in both comfort and knowledge related to PC Significant improvement in nurses' comfort identifying patients appropriate for PC, ($p < .005$) all others not significant Survey had a Cronbach's alpha of .803 The comfort questions *p*-value of paired pre and post test results ($p = .040$), suggesting some improvement in nurses' comfort, despite insignificance The knowledge questions *p*-value of paired pre and post-tests results ($p = .027$) is a statistically significant improvement in knowledge level	Highlights importance of nursing in determining whether or not patient needs PC consult PPSv2 not widely used or accepted as triggering tool in any other literature or by other experts (ie. CAPC) PPSv2 likely NOT going to be a sufficient tool for wide-spread use, limited generalizability to patients at end-of-life- authors do discuss validity and reliability as a prognostication tool, but not one to determine PC need Loss of a lot of nurses postsurvey, and only 12 completed both	Education Comfort and knowledge survey used in the McCamey survey	IV

No.	Citation / Search Engine Used	Purpose/ Objectives/ Description of Intervention	Study population/ Sample/ Setting	Study Design/ Methods/ Major Variables/ Instruments and Measures	Result(s)/ Main Findings	Implications/ critique	Themes/ Comments	Level of Evidence
12	Finkelstein, M., Goldstein, N.E., Horton, J.R., Eshak, D., Lee, E.J., & Kohli-Seth, R. (2016). Developing triggers for the surgical intensive care unit for palliative care integration. *Journal of Critical Care*, *35*(2016), 7-11. doi: 10.1016/j.jcrc.2016.04.010	To integrate PC into the surgical-ICU (SICU) using a trigger-based method as well as coordinated PC rounds	14 bed SICU of 1170 bed tertiary medical center in NYC n=492 patients who required admission to the SICU over a 9-month period between September 2013-May 2014	Prospective cohort study SICU and PC clinicians conducted literature review, came up with list of triggers Triggers: 1) LOS>10 days, 2) ICU readmission, 3) Intensivist referral, 4) s/p cardiac arrest, 5) Metastatic/advanced cancer, 6) A match of 2+ secondary triggers including Glasgow Coma Scale < 9, hypotension with vasopressor use >12 hrs., end-stage liver disease, end-stage renal disease, severe sepsis, any active cancer, pre-existing tracheostomy PC team rounded with intensivist 5 days/week, helped determine when criteria met. Intensivist then reached out to surgeon to ensure care was coordinated. PC team offered recommendations, and then was officially consulted to directly see patients if desired Stratified by those who died in hospital, those who discharged to hospice, and both together	122/492 (25%) matched at least 1 trigger, had PC consult 5-10% met 1 or more triggers but did not receive consult due to surgeon, intensivist, or family decline of consult 99 pts died in hospital or discharged to hospice, 68 matched triggers and received consult (68.7%) n = 71 died in hospital, n = 28 to hospice Readmission to SICU OR = 19.41, indicated highest likelihood of death- need for PC consult, 2nd highest was metastatic/advanced cancer, OR = 16.40 For those that died or discharged to hospice, all triggers for need for PC significant ($p < .001$) ORs for secondary criteria were not as large as other triggers	ICU readmission highly correlated with likelihood for death, PC needs Design model used more of an integrated model of PC versus consultation PC consult not clearly defined- PC provider input (but not provider-patient contact) considered a "PC consult" In some of the analyses, LOS and s/p cardiac arrest less highly correlated with outcome of death- other studies have found both to be more correlated ORs for secondary criteria indicate that may not be as useful for screening tool Authors discuss surgical culture/reluctance towards PC- state clinical triggers separate surgeon's sense of responsibility about adverse outcomes	Authors suggest that single criterion of readmission to ICU as an automatic trigger for PC consult- good idea, helps save PC provider resources Authors also suggest using some criteria as a pre-admission trigger for PC- i.e. Palliative surgery in cancer- could discuss goals prior to surgery and ICU admission	IV

No.	Citation / Search Engine Used	Purpose/ Objectives/ Description of Intervention	Study population/ Sample/ Setting	Study Design/ Methods/ Major Variables/ Instruments and Measures	Result(s)/ Main Findings	Implications/ critique	Themes/ Comments	Level of Evidence
13	Gade, G., Venohr, I., Conner, D., McGrady, K., Beane, J., Richardson, R.H. & Penna, R.D.(2008). Impact of an inpatient palliative care team: A randomized control trial. Journal of Palliative Medicine, 11(2), 180-190. doi: 10.1089/jpm.2007.0055	Evaluate the effects of PC vs. usual care	3 sites (Denver, CO, San Francisco, CA, Portland, OR), n=517 patients with life-limiting illnesses	Quantitative- Experimental-RCT *Variables:* Patient satisfaction, communication, cost, healthcare utilization *Instrument(s):* Surveys given to patient/proxies, different pertinent scales of the Modified City of Hope Patient Questionnaires (MCOHPQ)	Increased care experience satisfaction (p = .04) Increased satisfaction in communication with providers (p = .0004) Reduction in healthcare expenditure (p = .001) Reduction in ICU readmissions (p = .04)	Evidence that PC leads to patient and family satisfaction with communication focus of PC. Addresses the patient/family need to be active participant in decisions about care. Earlier use of PC use can facilitate this sooner for patients. Also, reduces healthcare costs and resource utilization	Early PC, cost reduction/resource utilization, satisfaction with PC	II

No.	Citation / Search Engine Used	Purpose/ Objectives/ Description of Intervention	Study population/ Sample/ Setting	Study Design/ Methods/ Major Variables/ Instruments and Measures	Result(s)/ Main Findings	Implications/ critique	Themes/ Comments	Level of Evidence
14	Hiler, C. A., Hickman, J. R. L., Reimer, A. P., & Wilson, K. (2018). Predictors of moral distress in a U.S. sample of critical care nurses. *American Journal of Critical Care*, *27*(1), 59–66. https://doi-org.wsuproxy.mnpals.net/10.4037/ajcc2018968	To explore the relationship between moral distress, practice environment, and patient safety in a national sample of critical care nurses	n=328 critical care nurses in the United States with at least 1 year of ICU experience who were recruited from the AACN e-newsletter and social media sites	Descriptive correlational design The MDS-R was used to assess moral distress and consists of 21 items PES-NWI is a 31-item survey tool that measures nurse perceptions of the practice environment A demographic questionnaire was used	As the practice environment deteriorates, moral distress increases ($p < .001$)	Moral distress is significantly associated with job dissatisfaction, burnout, decreased productivity, and higher turnover rates Potential for bias exists as nurses that completed the survey may have experienced higher levels of moral distress	Moral distress was higher when providing care that was considered futile. Moral distress was highest in nurses when family members wished to continue life support even though the nurse did not believe it to be in the patients' best interest	VI

No.	Citation / Search Engine Used	Purpose/ Objectives/ Description of Intervention	Study population/ Sample/ Setting	Study Design/ Methods/ Major Variables/ Instruments and Measures	Result(s)/ Main Findings	Implications/ critique	Themes/ Comments	Level of Evidence
15	Hua, M.S., Guohua, L., Blinderman, C.D., & Wunsch, H. (2014). Estimates of the need for palliative care consultation across United States intensive care units using a trigger-based model. *American Journal of Respiratory and Critical Care Medicine, 189*(4), 428-136. doi: 10.1164.rccm.201307-1229OC	To estimate the prevalence of ICU admissions who met criteria for PC consultation using different sets of triggers	Database of ICU admissions from 2001-2008 from Project IMPACT-ICUs in US with >50 patients n= 385,770 admissions to 179 ICUs	Retrospective cohort study Database reviewed, screened for patients who met criteria for PC consult Triggers: 1) ICU admission after hospital LOS >10 days, 2) Age >80 w/ 2+ comorbidities, 3) Stage IV malignancy, 4) s/p cardiac arrest, 5) Dx of intracerebral hemorrhage with mechanical ventilation Then compared patients to secondary set of triggers developed for use in surgical ICU, including family request, futility considered by medical team, advanced directive presence, family disagreement with each other or medical team, death expected within ICU stay, ICU LOS >1 month, diagnosis with median survival < 6 months, >3 ICU admissions during hospitalization, GCS< 8 for >1 week in patient >75 years, GCS=3, multi-system organ failure with specific clinical criteria, global cerebral ischemia, advanced dementia Sought to determine which of the triggers captured most patients identified as potentially benefiting from PC consult	1 in 7 ICU patients met criteria for PC consult based on the primary set of triggers. Estimates that 1 in 5 would meet criteria with multiple sets of secondary triggers 53,124 (13.8%) met one or more primary triggers for consultation 93.6% only met one trigger 6.3% met 2 triggers 0.2% met 3 triggers Most frequently met trigger was LOS >10 days (37.1%), followed by diagnosis of stage IV malignancy (27.8%), and s/p cardiac arrest (27.3%). Only 2.1% met age >80 w/ 2+ comorbidities Most patients meeting triggers were older, male, of African American race. Also, less likely to have independent functional status before ICU admission Admissions meeting triggers who died in ICU had significantly shorter LOS ($p < .001$) Using model based on several sets of triggers, 19.7% identified for PC consult	Lots of statistics and analyses regarding triggers and alternative triggers Just looked at triggers for PC, did not offer any information regarding how many of these patients actually received PC consult Authors highlighted the importance for consultative model vs. integrative- leads to continuity of care across hospital stay (versus just in ICU)	Gives evidence as to how many patients warrant PC consult based on criteria approach Article points out that we do not yet know which set of triggers best yet- needs more research Sepsis not listed as a trigger- may be a useful trigger to consider in the future	IV

No.	Citation / Search Engine Used	Purpose/ Objectives/ Description of Intervention	Study population/ Sample/ Setting	Study Design/ Methods/ Major Variables/ Instruments and Measures	Result(s)/ Main Findings	Implications/ critique	Themes/ Comments	Level of Evidence
16	Jones, B., & Bernstein, C. (2017). Palliative care triggers in the intensive care unit: A pilot success story. *Dimensions of Critical Care Nursing, 36*(2), 106-109. doi: 10.1097/dcc.0000000000000230	Implement PC triggers in the ICU of a large healthcare system and monitor the effect on PC referrals	A 16-bed ICU within the St. Elizabeth Healthcare system (Northern Kentucky-Cincinnati, Ohio) n=20 patients who had positive screens during August 2015, number of patients screened not given	Pilot study, Single Descriptive study Workgroup put in place 4 triggers for PC referral- 1) ICU stay > 2wks, 2) Stage IV malignancy, 3) Age >75 with multisystem organ failure, 4) Stroke scale >4 into EMR If any of criteria met, fired best practice alert (BPA) each time patient's chart was opened and provider had to give some sort of response to dismiss Provider could order PC consult directly from BPA Follow-up survey to providers and nurses about PC use	BPA fired on 20 patients- resulted in 11 consults directly from the trigger, and an additional 4 outside of the trigger order set (15 consults in August, whereas prior year only had 27 total) Survey results: PC beneficial to patients and families, 93.5%, improved communication 93.3%, goals clarified, 74.1%, reduced need for futile treatment, 58%, PC benefited providers/nurses personally, 64.5%	Had to pause trigger implementation across system due to lack of providers- more hired as a result Need to look at other areas for specialty triggers that could be successful (ie. ED, TCU, etc.) Poorly written article, missing key information, statistical analysis Very small, short study	Good background evidence and citation of other studies regarding evidence for trigger implementation	VI

No.	Citation / Search Engine Used	Purpose/ Objectives/ Description of Intervention	Study population/ Sample/ Setting	Study Design/ Methods/ Major Variables/ Instruments and Measures	Result(s)/ Main Findings	Implications/ critique	Themes/ Comments	Level of Evidence
17	Kavalieratos, D., Corbelli, J., Zhang, D., Dionne-Odom, J.N., Ernecoff, N.C., Hanmer, J., Schenker, Y. (2016). Association between palliative care and patient and caregiver outcomes: A systematic review and meta-analysis. *JAMA*, *316*(20), 2104-2114. doi: 10.1001/jama.2016.16840	To determine the association of palliative care with QOL, symptom burden, survival, and other outcomes for people with life-limiting illness and for their caregivers	43 RCTs provided data on 12, 731 patients and 2,479 caregivers. Inclusion criteria: RCT, patients ≥ 18 years old with life-threatening illness that reported at least 1 of 9 patient level outcomes including: QOL, symptom burden, mood, survival, advance care planning, site of death, resource utilization, health care expenditures, and satisfaction with care	Systematic Review/Meta-analysis The Cochrane Handbook for Systematic Reviews of Interventions was used Two independent reviewers evaluated all records for eligibility Cochrane Collaboration's tool was used to assess for risk of bias	PC was associated with significant improvements in patient QOL at the 1- to 3-month follow up (95% CI, 0.08-0.83) and symptom burden at the 1- to 3-month follow up (95% CI, -1.25 to -.07)	Heterogeneity was presented in interventions Several RCTs were not included in the meta-analysis due to missing data Quasi-experimental studies were excluded, although there is evidence in these studies that palliative care is beneficial	Supports the proposed DNP project as it shows that there is no harm associated with palliative care. Advocating for patients to receive palliative care is in the patient's best interest if they meet palliative care criteria	I

No.	Citation / Search Engine Used	Purpose/ Objectives/ Description of Intervention	Study population/ Sample/ Setting	Study Design/ Methods/ Major Variables/ Instruments and Measures	Result(s)/ Main Findings	Implications/ critique	Themes/ Comments	Level of Evidence
18	Lapp, E.A., & Iverson, L. (2015). Examination of a palliative care screening tool in intensive care unit patients. *Journal of Hospice and Palliative Nursing, 17*(6), 566-574. http://dx.doi.org.wsuproxy.mnpals.net/10.1097/NJH.0000000000000202	To assess the utilization of PC services in an academic medical center's ICU based on number of CAPC criteria met per patient; to determine the mortality rate in the ICU in relation to number of criteria met; to identify the most common criteria met during screening	N = 200 randomly selected ICU patients admitted between January 2013 to December 31, 2013 A 341-bed Midwestern academic medical center ICU setting was a 20-bed combined MICU and SICU Age < 19 years or those with incomplete medical records (missing class of CHF or stage of COPD) excluded	Retrospective, descriptive, exploratory study 22 Screening Criteria: 1) Stage IV cancer 2) Multiorgan failure 3) Neurological insult 4) Adv. Dementia/cognitive impairment 5) Intracranial hemorrhage 6) Chronic liver disease 7) Chronic renal disease 8) s/p cardiac arrest 9) Advanced COPD 10) Severe CHF 11) Frequent hospital admissions 12) >1 ICU admission during same hospital stay 13) Admission from nursing home 14) PEG tube placement 15) Trach placement 16) Consideration of ethics consult 17) CRRT 18) Conflicts 19) Lack of social support, 20) "No" answer to "surprise question 21) Anticipated discharge to long-term acute facility 22) Homebound due to chronic illness	88% (n = 176) patients met at least 1 screening criteria, 19.8% (n = 35) received a PC consult Of the 31 patients that died in the ICU, 45% (n = 14) received PC services Number of criteria met was significant in predicting probability of dying in ICU, $p < .001$ Tool is a predicator of mortality based on number of criteria met Most commonly met triggers: Multisystem organ failure (33%), Chronic renal disease (45%), frequent hospital or ICU admissions (37%), anticipated discharge to LTAC (38%) and advanced COPD (32%) Number of criteria met significant in predicting probability of being referred for PC consult, $p < .001$	Very long list- good screens unlikely going to be completed If 88% of people meet one criterion, likely too broad- PC teams unlikely to be able to meet demand and consultation should be reserved for those with more complex needs Authors state early PC should be considered for those meeting 1 or more criteria	Utilized the CAPC's screening criteria Did review criteria from 7 other studies Utilized in McCamey study	VI

No.	Citation / Search Engine Used	Purpose/ Objectives/ Description of Intervention	Study population/ Sample/ Setting	Study Design/ Methods/ Major Variables/ Instruments and Measures	Result(s)/ Main Findings	Implications/ critique	Themes/ Comments	Level of Evidence
19	McCamey, D.K. (2017). Comfort and knowledge: Nurse-driven palliative care screenings on admission to the neuro ICU (Doctoral dissertation). Retrieved from Georgetown University Institutional Repository (0000-0001-9864-5285)	To determine if implementing an education intervention and screening tool could increase nurse comfort and knowledge in recommending palliative care consults	14-bed neuro ICU at urban, tertiary, academic medical center in Washington D.C. n = 24 neuro ICU nurses who participated in project n = 56 neuro ICU patients screened	Descriptive pre/post evidence-based practice intervention Pre/post surveys about nurse knowledge about PC utilization in the ICU setting and comfort with recommending PC consults Paper screening tool using 22-item Center for Advancing Palliative Care (CAPC) ICU screening tool for PC Looked at increase in number of PC consults from nurse recommendations during rounds Evaluate most commonly met PC triggers in neuro ICU	RNs felt more comfortable assessing for PC (63% pre to 92% post) due to education intervention RNs felt more comfortable requesting PC consult from provider (58% to 75%) Increase in number of RNs who agreed that PC is compatible with critical care (42% to 96%) Most common CAPC criteria met were “major acute neurological insult”, “intracranial hemorrhage requiring mechanical ventilation, “would not be surprised if patient died in next 12 months”, and “lack of social support” 71.4% met 1 criterion, 5.7% met 2, 22.8% met 3 or more RNs more likely to recommend PC when 3+ items met on screening tool	RNs are more comfortable with PC in the ICU and recommending it after education intervention Criteria for PC screening tool may differ depending on ICU environment An automatic screen on admission to ICU may be useful Author did not screen beyond admission- may have missed patients who developed PC needs	Triggers/criteria PC consults suggested while rounding Nurse suggestion of PC	IV

No.	Citation / Search Engine Used	Purpose/ Objectives/ Description of Intervention	Study population/ Sample/ Setting	Study Design/ Methods/ Major Variables/ Instruments and Measures	Result(s)/ Main Findings	Implications/ critique	Themes/ Comments	Level of Evidence
20	National Consensus Project for Quality Palliative Care. (2018). Clinical practice guidelines for quality palliative care (4th ed.) [PDF document]. Retrieved from https://www.nationalcoalitionhpc.org/wp-content/uploads/2018/10/NCHPC-NCPGuidelines_4thED_web_FINAL.pdf	"To set expectations for excellence among clinicians treating patients with serious illness"; "to encourage and guide healthcare organizations and clinicians (including non-PC specialists) across the care continuum to integrate PC principles and best practices into their routine assessment and care of all seriously ill patients"; "to promote access to quality PC, foster consistent standards and criteria, and encourage continuity of PC across settings"	All inpatient and outpatient healthcare settings Directed audience is both PC specialists and any clinician caring for people with serious illness	8 domains covered: 1. Structure and processes of care 2. Physical aspects of care 3. Psychological and psychiatric aspects 4. Social aspects of care 5. Spiritual, religious, and existential aspects of care 6. Cultural aspects of care 7. Care of the patient nearing the end of life 8. Ethical and legal aspects of care	Systematic review completed to establish guidelines	Implicates care providers caring for anyone with serious illness (ICU providers/nurses), as well as specialist PC providers Care setting considered any area in which care provided to person with serious illness Encouragement of PC training/education for anyone providing care to seriously ill people Encourages environment in which all healthcare providers to serious ill people are assessed for emotional support needs Lacks clear criteria/guidelines on who should receive specialty PC consultation	Best practices for PC provision PC appropriate in all settings	I

No.	Citation / Search Engine Used	Purpose/ Objectives/ Description of Intervention	Study population/ Sample/ Setting	Study Design/ Methods/ Major Variables/ Instruments and Measures	Result(s)/ Main Findings	Implications/ critique	Themes/ Comments	Level of Evidence
21	Nelson, J.E., Cortez, T.B., Curtis, J.R., Lustbader, D.R., Mosenthal, A.C., Mulkerin, C.,…Weissman, D.E. (2011). Integrating palliative care in the ICU: The nurse in a leading role. *Journal of Hospice and Palliative Nursing, 13*(2), 89-94. doi:10.1097/NJH.0b013e318203d9ff	To discuss the key role that ICU nurses play in increasing the incorporation of PC into the ICU setting	ICU nurses in any ICU environment	Reviews previous nurse-driven ICU safety initiatives as a model that can be applied to ICU PC integration Discuss processes by which nurses can facilitate integration in a systematic way, and increase nurse participation in discussions and decision-making with families about care goals	CLABSI initiatives show that nurses can carry an initiative and put it into practice with demonstrable good outcomes Research about proactive family conferences shows increased satisfaction, reduced resource utilization, and less conflict. Nurses have been at the forefront of developing approaches to increase family meetings. Also, nurses should embrace education about family meetings and actively participate. Culture changes require inclusiveness, respect, and open communication. Nurses must become full partners in the development of screening tools and checklists. In CLABSI example, nurses must call out physicians who do not use or follow catheter insertion checklists PC specialists can educate ICU providers, address emotional and moral distress, and optimize systems IPAL-ICU is a great resource for integration of PC into individual critical care unit	Article focusing solely on the nursing role in increasing PC utilization in the ICU States that PC is needed when patients are both expected to benefit from ICU care, and those who are expected to die despite it Mentions that PC is also important for supporting healthcare providers and for appropriate resource allocation	Expert opinion Nurse role in PC Interdisciplinary collaboration	VII

No.	Citation / Search Engine Used	Purpose/ Objectives/ Description of Intervention	Study population/ Sample/ Setting	Study Design/ Methods/ Major Variables/ Instruments and Measures	Result(s)/ Main Findings	Implications/ critique	Themes/ Comments	Level of Evidence
22	Nelson, J.E., Curtis, J.R., Mulkerin, C., Campbell, M., Lustbader, D.R., Mosenthal, A.C.,..Weissman, D.E. (2013). Choosing and using screening criteria for palliative care consultation in the ICU: A report from Improving Palliative Care in the ICU (IPAL-ICU) Advisory Board. *Critical Care Medicine, 41*(10), 2318-2327. doi: 10.1097/CCM.0b013e31828cf12c.	To review the use of screening criteria as a mechanism for engaging PC consultants to assist with care of critically ill patients and their families in the ICU	ICU settings	Database search and literature review for all relevant literature about the utilization of criteria/triggers/screening tool for PC in the ICU Reviewed all the existing data and tools to identify different criteria and tools, describe different methods for selecting, implementing and evaluating triggers, and discussed different ways to increase access of ICU patients to PC	Use of triggers seems to help reduce ICU resource utilization without changing mortality Triggers must be adapted to the individual environment Triggers generally fall into the following domains: symptom distress, family distress, poor prognosis for survival or acceptable recovered, and intensive utilization of healthcare resources All staff, including nurses, social work, case management, risk management, ethics, and patients/families are stakeholders in selection and integration of screening criteria, not just ICU physicians Local data can guide trigger selection, ie. HCAHPS scores, average LOS longer than average Use of PC specialists may have positive impact on quality through education and role-modeling for ICU providers Evaluation measures domains include implementation process, impact on clinical care, impact on utilization, impact on the ICU and PC teams	Table with the different studies and their chosen triggers (up to 2012) -There are more current studies as well as studies replicating some of the triggers from these studies Table with important evaluating questions to discuss after the implementation phase	Expert opinion/consensus report Written by IPAL-ICU project board	VII

No.	Citation / Search Engine Used	Purpose/ Objectives/ Description of Intervention	Study population/ Sample/ Setting	Study Design/ Methods/ Major Variables/ Instruments and Measures	Result(s)/ Main Findings	Implications/ critique	Themes/ Comments	Level of Evidence
23	Norton, S.A., Hogan, L.A., Holloway, R.G., Temkin-Grenner, H., Buckley, M.J., Quill, T.E. (2007). Proactive palliative care in the medical intensive care unit: Effects on length of stay for selected high-risk patients. *Critical Care Medicine*, *35*(6), 1530-1535. doi: 10.1097/01.CCM.0000266533.06543.0C	To examine the effect of proactive PC consultation on length of stay for high-risk patients in the medical ICU (MICU)	17-bed MICU in 750 bed academic tertiary center in New York Of 743 admissions, 191 patients identified with serious illness, high risk of dying between March 26, 2004-March 3, 2005 n = 65 usual care n = 126 intervention group	Prospective pre/post nonequivalent control group design, performance improvement study, quasi-experimental Variables: patient lengths of stay, mortality in ICU and hospital All admits screened within 72 hrs. of admission based on criteria Criteria: ICU admit with prior hospital LOS >10 days, age >80 years with 2+ comorbidities, active stage IV malignancy, s/p cardiac arrest, diagnosis of intracerebral hemorrhage requiring mechanical ventilation 4-month usual care phase, followed by 7.5-month proactive PC intervention phase During intervention, all patients who met 1+ criteria received a basic or complete PC consult- Basic = EMR and case review, recommendations made to medical team, PC provider had no direct contact with family Complete = all listed plus direct contact with patient/family	26% of admissions resulted in a positive screen No difference in mortality rate in MICU pre/post test 84% of positive screens only met 1 criterion, 15% met 2, 1 met 3+ Time to PC consult during usual care 14 days, time to basic PC consult during intervention 1.73 days on average, 25% received complete consult within 4.9 days MICU LOS 16.28 days in pre-group, 8.96 days in post-group ($p < .001$) No difference in overall hospital LOS ($p = .5011$) Usual care patients had 5 PC consults during time period (8%), all positive screens during intervention (126 patients) received basic consult, 31 patients (25%) went on to receive complete consult	Shorter LOS of those in usual care group Over ¼ patients had positive screen during intervention phase No changes in mortality rate between groups Time to PC consult- higher in post group because relying on criteria, not provider decision- to be expected due to screening No statistical analysis given on number of people receiving complete consults (from 5/65 to 31/126)- is 8% up to 25% statistically significant difference?	Triggers may need to be more specific to meet provider demand Having indirect PC basic consult (i.e. limited to PC provider input to MICU team) versus complete consult confusing, poor design- could help if considering integrated approach Triggers from this study are the basis or standard upon which many others developed their studies	III

No.	Citation / Search Engine Used	Purpose/ Objectives/ Description of Intervention	Study population/ Sample/ Setting	Study Design/ Methods/ Major Variables/ Instruments and Measures	Result(s)/ Main Findings	Implications/ critique	Themes/ Comments	Level of Evidence
24	Perrin, K.O., & Kazanowski, M. (2015). Overcoming barriers to palliative care consultation. *Critical Care Nurse, 35*(5), 44-51. doi: 10.4037/ccn2015357	To discuss why patients are not receiving PC consults in the critical care environment, despite evidence of its benefits, and to review how nurses can assist in overcoming these barriers	Critical care environments ICU nurses	Background SUPPORT Study (1995) states that healthcare providers have difficulty determining when patients approaching death, and with communicating about patients' preferences for end-of-life care Provides evidence-based benefits of PC for patients in ICU (includes early initiation of comfort measures, decreased LOS, decrease cost of care, staff support for morally distressing situations, reduced readmissions to ICU due to clarified goals of care, continuity of care outside of ICU)	Barriers: Misunderstandings about what PC is a lack of knowledge on what the available PC resources are Solution: education about PC use with ICU care Difficulty initiating a PC discussion: research shows physicians have anxiety discussing end-of-life transitions, surgeons having these conversations are usually quick, ineffective. Solution: Automatic triggers for PC takes onus off providers for ordering (resolves pride, reluctancy issues) Cultural issues: culture of the unit and culture of patient's family. Both staff members and families have unrealistic expectations about results of care due to medical technology Solution: these are an indicator of a need for PC, early involvement most useful Nurses must be involved with overcoming barriers, as they deal with high levels of stress about end-of-life decision making; nurses to be champions of PC because they have most access to patient information on symptoms, signs, need for PC	Authors highlight evidence/education as a way to combat barriers Discuss that up to 45% of nurses consider leaving due to high levels of moral distress, and state that they must be involved with overcoming barriers to PC for their own well-being: "being involved in decision making rather than merely enacting the results can limit nurses' moral distress"	Expert opinion Useful article discussing the many barriers to PC in the ICU environment Highlights importance of evidence/education Use for DNP project LMS	VII

No.	Citation / Search Engine Used	Purpose/ Objectives/ Description of Intervention	Study population/ Sample/ Setting	Study Design/ Methods/ Major Variables/ Instruments and Measures	Result(s)/ Main Findings	Implications/ critique	Themes/ Comments	Level of Evidence
25	Pringle, J., Johnston, B., & Buchanan, D. (2015). Dignity and patient-centered care for people with palliative care needs in the acute hospital setting: A systematic review. *Palliative Medicine, 29*(8), 675-694. doi: 10.1177/0269216315575681	Evaluate evidence at an international level associated with dignity and person-centered care for patients in an acute care setting with palliative care needs	n = 33 studies found in 7 electronic databases from year 2000-2014	Systematic review Methods used to collect data for studies in this review included interviews, surveys, and questionnaires	Patient perspective factors to dignity included patient privacy, pain management, impaired communication, staff attitudes, and feelings of distress/anxiety Family perspectives that influenced patients' dignity included need for bereavement support, and staff approaches/models of patient care Healthcare provider perspectives of factors that influence patient dignity included symptom management and patient privacy	Awareness is created for threats to patient dignity in the acute care settings which include symptom management, models/approaches to care provision, and healthcare settings and design Healthcare providers can benefit from adequate training to prevent/diminish barriers to providing dignified patient centered care Recognizing patient symptoms, and reducing patient distress is important to maintaining and promoting patients' dignity	If patients receiving palliative care lack the feeling of dignity, it can be a barrier for palliative care services/interventions. Awareness of the threats identified in this study can be used to educate the nurses in our DNP project	V

No.	Citation / Search Engine Used	Purpose/ Objectives/ Description of Intervention	Study population/ Sample/ Setting	Study Design/ Methods/ Major Variables/ Instruments and Measures	Result(s)/ Main Findings	Implications/ critique	Themes/ Comments	Level of Evidence
26	Sihra, L., Harris, M., O'Reardon, C. (2011). Using the improving palliative care in the intensive care unit (IPAL-ICU) project to promote palliative care consultation. *Journal of Pain and Symptom Management, 42*(5), 672-675. doi: 10.1016/j.jpainsymman.2011.08.002	Improve the utilization of PC by screening patients for PC consultations	n = 2685 admissions screened, n = 273 patients identified for PC consult in the medical ICU (MICU) and surgical ICU (SICU) between April-December 2010 at a hospital in Texas	Single descriptive correlational Variable: Fraction of consults obtained from the total number of patients screened who met criteria Screen criteria: 70+ yrs. with 2+ comorbidities, stage IV cancer, mechanical ventilation>7+ days, exceed expected LOS by >50%, misc. areas of concern (long LOS, poor prognosis) All patients were screened by an RN from the study. For those that met any triggers, the RN then informed the PC provider. He/she would then contact the attending provider to suggest consult based on screening	273 pts screened, 97 consults (35.5% received) MICU consults increased by 113% SICU up by 51%	The authors hypothesized that perhaps the simple suggestion of a need for a PC consult led to an increase in consults because it is often overlooked by other non-PC providers No indication why consults were turned down (only 35.5% put in consult- what about the other 60%?) No statistical analysis (simply stated amount over last year)- no other information given	Primary outcome was the number of PC consults obtained when criteria met Used IPAL-ICU criteria for implementation Referenced Norton et al. study	VI

No.	Citation / Search Engine Used	Purpose/ Objectives/ Description of Intervention	Study population/ Sample/ Setting	Study Design/ Methods/ Major Variables/ Instruments and Measures	Result(s)/ Main Findings	Implications/ critique	Themes/ Comments	Level of Evidence
27	Weissman, D.E., & Meier, D.E. (2011). Identifying patients in need of a palliative care assessment in the hospital setting: A consensus report from the Center to Advance Palliative Care. *Journal of Palliative Medicine, 14*(1), 17-23. doi: 10:1089/jpm.2010.0347	The CAPC convened a consensus panel to select criteria by which patients at high risk for unmet PC needs can be identified in advance for a PC screening assessment "What criteria should be used for hospitals to conduct prospective case-finding, via a checklist, for patients with unmet PC needs?"	CAPC consensus panel from range of disciplines, from academic, VA, and community settings; single and large health systems; adult and pediatric programs	2 lists developed: one for screening at time of admission and one for use during daily rounds Consultation service the most common delivery method	ADMISSION SCREENING CRITERIA: A potential life-limiting or life-threatening condition *and…*Primary (5-item list) and secondary criteria (8-item list) (see article) OR DAILY SCREENING CRITERIA Primary Criteria (5-item list) (see article) plus Secondary Criteria (4-item list) (see article)	Authors state that the reason for the consensus was workforce shortages, late referrals and PC program resource constraints-goal is to identify those with the most complex needs Authors state that more education is needed to enable providers to give basic/primary palliative care, and to reserve specialty PC for the most complex patients Lots of secondary criteria and long lists would be difficult to cover daily	Authors state that education initiatives are needs to increase PC utilization	VII

No.	Citation / Search Engine Used	Purpose/ Objectives/ Description of Intervention	Study population/ Sample/ Setting	Study Design/ Methods/ Major Variables/ Instruments and Measures	Result(s)/ Main Findings	Implications/ critique	Themes/ Comments	Level of Evidence
28	Wolf, A.T. (2016). Palliative Care and Moral Distress in the Intensive Care Unit. *Journal of Hospice & Palliative Nursing*, *18*(5), 405–412. https://doi-org.wsuproxy.mnpals.net/10.1097/NJH.0000000000000265	To examine the relationship between PC and moral distress among health care providers in the ICU How do PC interventions for critically ill adults compared with no PC, relate to moral distress among health care providers in the ICU?	4 studies-2 quantitative and 2 qualitative studies	An integrative literature review with two quantitative and two qualitative studies	Significant negative correlation between nurse collaboration and end-of-life patient care conferences and frequency of moral distress (p = .007). Significant positive correlation between ELNEC training and total moral distress frequency score (p = .02)	Nurses reported that their concerns were often dismissed or criticized by physicians resulting in moral distress. Incorporating the nurse-led PC screening tool can be an effective empowerment tool that has been created from EBP recommendations Number of studies included in this review were limited. For successful implementation of the nurse-led PC screening tool, enough evidence must be available to support the PC criteria in the screening tool	Integrating PC with ICU care is essential to improve patient care and reduce moral distress to health care providers	V

No.	Citation / Search Engine Used	Purpose/ Objectives/ Description of Intervention	Study population/ Sample/ Setting	Study Design/ Methods/ Major Variables/ Instruments and Measures	Result(s)/ Main Findings	Implications/ critique	Themes/ Comments	Level of Evidence
29	Zalenski, R., Courage, C., Edelen, A., Waselewsky, D., Krayem, H., Latozas, J., & Kaufman, D. (2014). Evaluation of screening criteria for palliative care consultation in the MICU: a multihospital analysis**.** *BMJ Support & Palliative Care, 0,* 1-9. doi: 10.1136/bmjspcare-2013-000570	To improve allocation of PC consultations to MICU patients with highest need, evaluating a 7-item trigger screen applied to MICU admissions IPAL-ICU initiative	MICUs in 4 Midwest teaching hospitals, n = 1071 admissions, 59.3% screened (n = 636), 35.3% with positive screen (n = 225) 16-week period between October 2012-April 2013	Number of patients screened; number who had PC consults ordered Screen scores compared with mortality, hospice discharge, LOS Education given to nurses on screening tool utilization On admission, RN screened each patient, and if patient had positive screen, RN to notify intensivist and state that PC consult indicated, authors note this generally happened during daily rounds Patient variables: age, gender, race, hospital/ICU LOS, screen scores, hospital mortality, discharge status, and (if applicable) date of PC order and consult	Positive screen increased likelihood of PC consult (33.6% vs. 3.4%, $p < .001$) Increased likelihood of consult with higher screen score Higher screen correlated with longer LOS, $p < .001$, increased risk of inpatient mortality, $p < .001$, and hospice discharge, $p < .001$ Criteria of "admission from skilled nursing facility", "readmission to ICU" significant predictors of LOS and "cancer", "s/p cardiac arrest" and "team perceived need" predictors of mortality and hospice discharge "End-stage dementia" and "intracranial bleed" not predictive of adverse outcomes Intensivists ordered PC consult for 1/3 of patients with positive screen	Used criteria from Weissman et al. (2011), and Nelson et al. (2013) Authors state "screenings for subgroups of patients improve consultation rates, there are no comprehensive studies examining the association of screening criteria with the multiple adverse outcomes that PC addresses" -this is not necessarily true upon review of literature Older age associated with positive screens, but not included as trigger because "age alone should not be a reason to withhold care if a person can benefit from it" Authors state low consult rate possibly due to lack of "buy in" to PC	Similar design/model to DNP project Trigger-based criteria for PC Intensivists only ordered PC consults 1/3 of time. More research on why warranted Need for PC in ICU education	IV

Appendix D

Levels of Evidence Grading Criteria

Levels of Evidence	Description
Level I	Evidence from a systematic review or meta-analysis of all relevant RCTs (randomized controlled trial) or evidence-based clinical practice guidelines based on systematic reviews of RCTs or three or more RCTs of good quality that have similar results.
Level II	Evidence obtained from at least one well-designed RCT (e.g. large multi-site RCT).
Level III	Evidence obtained from well-designed controlled trials without randomization (i.e. quasi-experimental).
Level IV	Evidence from well-designed case-control or cohort studies.
Level V	Evidence from systematic reviews of descriptive and qualitative studies (meta-synthesis).
Level VI	Evidence from a single descriptive or qualitative study.
Level VII	Evidence from the opinion of authorities and/or reports of expert committees.

Ackley, B. J., Swan, B. A., Ladwig, G., & Tucker, S. (2008). Evidence-based nursing care guidelines: Medical-surgical interventions. (p. 7). St. Louis, MO: Mosby Elsevier.

Appendix E

Agency for Healthcare Research and Quality Evidence Quality Table

High Quality Evidence	Evidence includes consistent results from well-designed, well-conducted studies in representative populations that directly assess effects on health outcomes (at least two consistent, higher-quality randomized controlled trials [RCTs], or multiple, consistent observational studies with no significant methodological flaws showing large effects).
Moderate Quality Evidence	Evidence is sufficient to determine effects on health outcomes, but the strength of the evidence is limited by the number, quality, size, or consistency of included studies; generalizability to routine practice; or indirect nature of the evidence on health outcomes (at least one higher-quality trial with >100 subjects; two or more higher-quality trials with some inconsistency; at least two consistent, lower-quality trials; or multiple, consistent observational studies with no significant methodological flaws showing at least moderate effects).
Low Quality Evidence	Evidence is insufficient to assess effects on health outcomes because of limited number or power of studies, large and unexplained inconsistency between higher quality studies, important flaws in study design or conduct, gaps in the chain of evidence, or lack of information on important health outcomes.

Appendix F1

AGREE II Tool Scoresheet

Key: Rater #1 (EL): X, Rater #2 (AK): x

Domain	Item	AGREE II Rating						
		1 *Strongly Disagree*	**2**	**3**	**4**	**5**	**6**	**7** *Strongly Agree*
Scope and purpose	1. The overall objective(s) of the guideline is (are) specifically described. Comments: "To improve access to quality PC for all people with serious illness, regardless of setting, diagnosis, prognosis, or age", "to encourage and guide healthcare organizations and clinicians (including non-PC specialists) across the care continuum to integrate PC principles and best practices into their route assessment and care of all seriously ill patients", "to formalize and delineate available evidence-based process and practices as well as consensus recommendations for the provision of safe and reliable high-quality PC for adults, children, and families with serious illness in all care settings", "to promote access to quality PC, foster consistent standards and criteria, and encourage continuity of PC across settings"							X x
	2. The health question(s) covered by the guideline is (are) specifically described. Comments: Yes, but the 10 key questions are not explicitly in the guidelines, but instead are linked and reported on in the accompanying systematic review: 1. A. What is effect of the interdisciplinary team care on patient outcomes and family/caregiver satisfaction with care? B. What is the impact of PC interventions to improve continuity and coordination of care on patient and family/caregiver outcomes? 2. What is the impact of PC interventions on physical symptom screening, assessment, and management of patients? 3. What is the impact of PC interventions on psychological and psychiatric assessment and management of patients? 4. Does an assessment of environmental or social needs as part of a comprehensive palliative assessment improve needs identification and access to relevant services? 5. What is the effect of a spiritual assessment and/or programs on patient and family/caregiver spiritual and emotional well-being? 6. What is the impact of culturally and linguistically sensitive care on physical, social, emotional and spiritual well-being of the patient and family/caregiver? 7. A. What is the effect of grief and bereavement programs on family/caregiver outcomes? B. What is the impact of hospice and PC in the final days of life on quality of care and quality of death/dying? 8. What is the impact of advance care planning on substituted decision-making regarding life-sustaining treatments?						X	x

Key: Rater #1 (EL): X, Rater #2 (AK): x								
Domain	**Item**	**AGREE II Rating**						
		1 *Strongly Disagree*	**2**	**3**	**4**	**5**	**6**	**7** *Strongly Agree*
	3. The population (patients, public, etc.) to whom the guideline is meant to apply is specifically described. Comment: "Adults, children and families with serious illness in all care settings", also defines serious illness as "a health condition that carries a high risk of mortality and either negatively impacts a person's daily function or quality of life or excessively strains their caregiver" -This is still relatively ambiguous and inclusive definition of population and care setting						X x	
Stakeholder involvement	4. The guideline development group includes individuals from all the relevant professional groups. Comment: Yes, contributors and writers came from 16 national organizations. Additionally, many subject matter experts were consulted for more information and input as needed							X x
	5. The views and preferences of the target population (patients, public, etc.) have been sought. Comment: There was not an overt mention of this, but the accompanying systematic review does discuss what the literature says the main goals, wishes, and desires of the patients and family/caregivers are. Through evidence, the views and preferences are accounted for, but not explicitly sought in development of this particular guideline			x	X			
	6. The target users of the guideline are clearly defined. Comment: "PC specialists as well as all clinicians who care for people with serious illness", "includes specialty hospice and PC practitioners and teams, as well as health systems, primary care and specialist health practices, cancer centers, dialysis units, long-term care facilities, assisted living facilities, Veterans Health Administration providers, home health and hospice agencies, prisons, and other care providers…social service agencies, homeless shelters, and another other community organizations serving seriously ill individuals"							X x
Rigor of development	7. Systematic methods were used to search for evidence. Comment: Yes, search methods are discussed in both the clinical guidelines, and in the accompanying systematic review. Dates, databases, years, and terms searched are included.							X x
	8. The criteria for selecting the evidence are clearly described. Comment:				X	x		

Key: Rater #1 (EL): X, Rater #2 (AK): x								
Domain	**Item**	**AGREE II Rating**						
		1 *Strongly Disagree*	**2**	**3**	**4**	**5**	**6**	**7** *Strongly Agree*
	There is a brief statement in the guidelines themselves about the review process and inclusion process, describing the 3-step process. However, process is clearly described in the systematic review.							
	9. The strengths and limitations of the body of evidence are clearly described. Comment: Yes, the body of evidence is thoroughly evaluated, but again, this information is included only in the accompanying systematic review, not in the actual guidelines.			x	X			
	10. The methods for formulating the recommendations are clearly described. Comment: They are described in the systematic review, not in the guidelines. The recommendation development is not crystal clear, which may be related to the fact that this guideline is the 4th edition, and the recommendations have been in place from 3 previous publications and only some have been added or revised as needed.			X	x			
	11. The health benefits, side effects and risks have been considered in formulating the recommendations. Comment: Both clinical and operational implications are called out at the end of each domain covered in the guidelines. Risks are not particularly addressed, but this may also be because there are minimal risks associated with palliative care provision.				x		X	
	12. There is an explicit link between the recommendations and the supporting evidence. Comment: The information is divided into different domains, related to the 10 key questions posed in the systematic review. At the end of each domain in the guidelines, the key research evidence is discussed, but actual information about the studies are included in tables in the systematic review. The guidelines explicitly state where to find the supporting evidence, but it is not readily available in the guidelines document.					X x		
	13. The guideline has been externally reviewed by experts prior to its publication. Comment: Unclear. The document lists 16 national organizations that partook in the creation and revision of the guidelines, as well as numerous subject matter experts who contributed. While there is no explicit explanation of an external review, one can infer that the included material has been reviewed and approved by many experts at some point. Additionally, the systematic review was peer-reviewed and published by a medical journal, so the evidence behind the guidelines certainly was reviewed.			X x				

Key: Rater #1 (EL): X, Rater #2 (AK): x								
Domain	**Item**	**AGREE II Rating**						
		1 *Strongly Disagree*	**2**	**3**	**4**	**5**	**6**	**7** *Strongly Agree*
	14. A procedure for updating the guideline is provided. Comment: Only commentary about what revisions were made to create the 4th edition (current) guidelines is provided.	X x						
Clarity of presentation	15. The recommendations are specific and unambiguous. Comment: The recommendations are stated and then practice examples are also provided for further explanation and clarification.				x	X		
	16. The different options for management of the condition or health issue are clearly presented. Comment: Different areas where palliative care is practiced are taken into account and presented.						X x	
	17. Key recommendations are easily identifiable. Comment: The document is relatively well organized and key recommendations called out but given that there are 8 domains as well as many subsections, the recommendations can get lost.					X	x	
Applicability	18. The guideline describes facilitators and barriers to its application. Comment:		X x					
	19. The guideline provides advice and/or tools on how the recommendations can be put into practice. Comment: Clinical and operational implications are listed after every domain's recommendations, and practice examples in different areas of care are also given.							X x
	20. The potential resource implications of applying the recommendations have been considered. Comment: The authors of the guidelines specifically state in the beginning that not all areas/organizations will have readily available expert palliative care resources, and that "palliative care principles and practices can be delivered by any clinician caring for the seriously ill and in any setting". They talk about the skills that all healthcare providers should have to offer the highest quality of care to their seriously ill patients. They do not go into more specifics than this, however.				X x			
	21. The guideline presents monitoring and/ or auditing criteria. Comment: Areas for assessment and reassessment are noted.			X	x			

Key: Rater #1 (EL): X, Rater #2 (AK): x								
Domain	**Item**	**AGREE II Rating**						
		1 *Strongly Disagree*	**2**	**3**	**4**	**5**	**6**	**7** *Strongly Agree*
Editorial independence	22. The views of the funding body have not influenced the content of the guideline. Comment: Unclear. There is no mention of this, other than that National Coalition for Hospice and Palliative Care is grateful for the funding provided from the Gordon and Betty Moore Foundation, among others.	X x						
	23. Competing interests of guideline development group members have been recorded and addressed. Comment: "The members of the Writing Workgroup and Steering Committee did not disclose any relationships constituting a conflict of interest". The main people directly involved with the creation of the guidelines did not have any explicit conflicts of interest noted, but with the amount of people/organizations/field experts consulted for these guidelines, it is likely one could be found somewhere.						X x	
Overall Guideline Assessment	1. Rate the overall quality of this guideline. Overall, this guideline has a lot of sound recommendations for the provision of quality palliative care. It is an ambitious document, offering measures for all areas of care, and for all seriously ill individuals. Because of the broadness and generalizability that this requires, the guidelines also must be less specific and have more room for interpretation. If the guideline was for a specific area of care, like the ICU for example, the recommendations would need to be far less broad and generalizable. This guideline provides a good benchmark for all areas where palliative care is delivered. The accompanying systematic review also does a good job of breaking down the evidence behind all the recommendations, but looking through two large documents, instead of just one, is cumbersome for readers.	**1** *Lowest possible quality*	**2**	**3**	**4** x	**5** **X**	**6**	**7** *Highest possible quality*
Overall Guideline Assessment	2. I would recommend this guideline for use. Notes: These recommendations are great for all healthcare providers to review to ensure that they are offering their patients the highest level of care that they can. Any area of care dealing with patients suffering from serious illness could take something away from the guidelines. Certain improvements could be made to make them less generalizable and more applicable to different areas of care. Additionally, more information from the systematic review should be included in the actual body of the guidelines so that readers do not have to go between two documents.	*Yes*	*Yes, with modifications*					*No*
			X x					

Appendix F2

AGREE II Tool Domain Scoring

Domain	Item	Rater #1 (EL)	Rater #2 (AK)	Total	Calculated Domain Total
1. Scope and Purpose	**#1**	7	7		
	#2	6	7		
	#3	6	6		
		19	**20**	**39**	**91.67%**
2. Stakeholder Involvement	**#4**	7	7		
	#5	4	3		
	#6	7	7		
		18	**17**	**5**	**80.56%**
3. Rigor of Development	**#7**	7	7		
	#8	4	5		
	#9	4	3		
	#10	3	4		
	#11	6	4		
	#12	5	5		
	#13	3	3		
	#14	1	1		
		33	**32**	**5**	**51.04%**
4. Clarity of Presentation	**#15**	5	4		
	#16	6	6		
	#17	5	6		
		16	**16**	**32**	**72.22%**
5. Applicability	**#18**	2	2		
	#19	7	7		
	#20	4	4		
	#21	3	4		
		16	**17**	**3**	**52.08%**
6. Editorial Independence	**#22**	1	1		
	#23	6	6		
		7	**7**	**14**	**41.67%**
Overall Guideline Assessment	Quality	5	4		**58.33%**
	Recommend for Use	Yes, with modifications	Yes, with modifications		

Appendix G

Critical Appraisal of Meta-Analysis

Kavalieratos, D., Corbelli, J., Zhang, D., Dionne-Odom, J.N., Ernecoff, N.C., Hanmer, J.,…Schenker, Y. (2016). Association between palliative care and patient and caregiver outcomes: A systematic review and meta-analysis. *JAMA, 316*(20), 2104-2114. doi: 10.1001/jama.2016.16840	
1. General Questions to address • Are the results of individual studies included similar across studies? • Are the differences between studies truly differences or did the differences occur by chance? • Does the review address a sensible question? • Does the review describe population, intervention/treatment, outcome(s) considered? • Is the review question clearly stated?	Yes, the results are similar amongst all the studies included in the meta-analysis. The differences between studies occurred by chance. Post HOC analyses were conducted to determine if there were differences between setting and disease. Univariable meta-regression was used to examine associations between estimated effect sizes, publication year, and intervention intensity. Yes, the review addresses a sensible question on p. 3. To conduct a systematic review of palliative care RCTs to provide an up-to-date summary of palliative care outcomes and to perform meta-analysis to estimate the association of palliative care with patient QOL, symptom burden, and survival. Yes, the review describes the population, intervention/treatment outcomes that are considered on p. 3 which includes the following: The RCTs investigating palliative care interventions targeting adult patients (≥ 18 years) with life-threatening illness that reported on at least 1 of 9 patient-level outcomes were included: QOL, symptom burden, mood, survival, advance care planning, site of death, resource utilization, health care expenditures, and satisfaction with care. The review question is clearly stated on p. 3.
2. Literature Review • Were comprehensive search methods used to locate studies? • Was a thorough search of appropriate databases done? • Were other potentially important databases explored? • Were the search methods thoroughly described?	No, comprehensive search methods were not used. Only four electronic databases were used, including MELINE, EMBASE, CINAHL, and Cochrane Library's CENTRAL from inception to July 22, 2016. Yes, a thorough search of appropriate databases was done and included on p. 3. Yes, the Cochrane Handbook for Systematic Reviews of Interventions was used to conduct the systematic review and meta-analysis. Yes, the search methods were thoroughly described on p. 3. The database searches were created by a health sciences librarian.

• Were conclusions drawn about the possible impact of publication bias? • Were the overall findings assessed for their robustness in terms of the selective inclusion or exclusion of doubtful or biased studies?	Yes, conclusions were drawn about the possible impact of bias. Publication bias as was assessed through funnel plots and egger tests. According to the tests, publication bias was not detected. Yes, the overall findings were assessed for their robustness. Two of four investigators used structured, customized forms to extract information from each trial's primary and secondary reports. The Cochrane Collaboration's tool was used to assess the risk of bias independently by two investigators.
3. Study Selection Were inclusion and exclusion criteria for selecting studies clearly described and fairly applied?	Yes, inclusion and exclusion criteria were clearly described. Studies that included interventions that treated a single symptom, targeted only one palliative care domain, or did not target patients were excluded. Searches also excluded pediatric and non-English language articles. Trials with usual care, waitlist, or attention control comparators were included.
4. Critical Appraisal • Was study quality assessed by blinded or independent raters? • Was the validity of included studies assessed? • Was the validity of studies assessed appropriately? • Are the validity criteria reported? • Were the primary studies of high methodological quality?	Yes, the study quality was assessed by two independent reviewers. Yes, the validity of the studies was assessed and discussed on p. 5. To account for variability in the timing of the study end points, clinically relevant follow-up periods of 1 to 3 and 4 to 6 months were used. No, the validity of studies was not assessed appropriately. There was no discussion of external validity, internal validity, or construct validity of any of the studies included in the review. No, the validity criteria are not reported, however the study does mention that due to the variety of instruments used to evaluate QOL and symptom burden, pooled effects were summarized as standardized mean differences (SMDs). Yes, 43 RCTs were included in this study.
5. Similarity of Groups and Treatments • Were reasons given for any differences between individual studies explored? • Are treatments similar enough to combine? • Are outcome measures similar between studies?	Yes, reasons were given for differences that existed between studies. Heterogeneity was quantified using the I^2 statistic and interpreted qualitatively as low, moderate, and high. Heterogeneity was also assessed using the τ^2 and Cochrane *Q* Statistic. Yes, the studies included in the meta-analysis were similar enough to combine. Yes, the outcome measures are similar between studies. Yes, when evaluating the palliative care domains, included studies seem to indicate similar effects. Heterogeneity of the studies is discussed. It is mentioned that although the interventions met the defined definition of palliative care for this study, their diversity likely introduced heterogeneity into the meta-analysis (p.9). Heterogeneity was explained by study setting, with hospital-based palliative care

• Do the included studies seem to indicate similar effects? • If not, was the heterogeneity of effect assessed and discussed? • How precise were the results?	interventions showing stronger associations with improved QOL (p = 0.04) (p.6). Heterogeneity was largely explained by study setting, with hospital-based palliative care interventions showing stronger associations with improved symptom burden ($p <$ 0.001) (p. 7). Palliative care interventions were associated with significant improvements in QOL and symptom burden but not in 1- to 3-month survival. Because of marked heterogeneity among trials in methodological quality and rigor, there was weak evidence for these associations (p. 9).
6. Data Synthesis • Were the findings from individual studies combined appropriately? • Are the methods used to combine studies reported? • Was the range of likely effect sizes presented? • Were the methods documented? • Are review methods clearly reported? • Application of results to patient care: Is a practice change warranted? Were all important outcomes considered? Are the benefits worth the costs and potential risks?	Yes, the findings from individual studies were combined appropriately. Palliative care was associated with improvements in advance care planning, patient and caregiver satisfaction, and lower health care utilization. Associations varied with other outcomes including site of death, patient mood, health care expenditures, and caregiver QOL, mood, or burden (p.2). Yes, the methods used to combine the studies in the meta-analysis include standard mean differences and hazard ratios. Yes, the range of likely effect sizes was presented. Yes, the review methods are clearly reported on p. 4-5. Yes, a practice change is warranted. Palliative care was associated with improvement in advance care planning, increased patient and caregiver satisfaction with care, and lower health care utilization. Palliative care interventions were associated with improvements in patient QOL and symptom burden. Yes, the benefits are worth the costs and potential risks.

Appendix H

Critical Appraisal of Systematic Reviews

Citation: Aslakson, R., Cheng, J., Vollenweider, D., Galusca, D., Smith, T. J., & Pronovost, P. J. (2014). Evidence-Based Palliative Care in the Intensive Care Unit: A Systematic Review of Interventions. *Journal of Palliative Medicine*, *17*(2), 219–235. https://doi-org.wsuproxy.mnpals.net/10.1089/jpm.2013.0409	
1. Research Question • Does the review address a clearly defined issue? • Does the review describe: • i. the population studied? • ii. the intervention/treatment given? • iii. the outcome(s) considered? • Is the review question clearly and explicitly stated?	Yes, the review addresses a clearly defined issue: integration of palliative care is essential to improve end-of-life care, as well as help manage short and long-term physical and psychological burdens and functional impairments that patients and family members may experience. Yes, the review describes the population: adult patients in the ICU age ≥18. Yes, the review describes the intervention: palliative care integration in ICU. No, the review does not describe the outcomes considered in the research question/ statement: The purpose was to review the evidence-based interventions that improve the delivery of palliative care in adult ICU patents. Outcome measures of the literature were discussed in the results section. No, the review question is not clearly stated: There is not a specific PICOT question stated, however the it can be implied that this review is evaluating the effectiveness of palliative care interventions in adult patients in the ICU.
2. Literature Review • Were comprehensive search methods used to locate studies? • Was a thorough search of appropriate databases done? • Were other potentially important databases explored? • Were the search methods thoroughly described? • Were conclusions drawn about the possible impact of publication bias? • Were the overall findings assessed for their robustness in terms of the selective inclusion or exclusion of doubtful or biased studies?	Yes, comprehensive search methods were used. In addition to the five electronic databases searched, a hand search from both personal files and reference lists of review articles, consensus guidelines, professional society statements and articles was included. Yes, a thorough search of appropriate databases was conducted. The search terms “palliative care” and “intensive care unit” were mapped to the appropriate medical subject headings (MeSH) terms Each database search is thoroughly described in appendix 2 of this study. No, other potentially important databases were not searched. MEDLINE, Embase, CINAHL, Cochrane Library, and the Web of Science were included. Google Scholar, PubMed, and ProQuest could have resulted in a more extensive search. No, search methods were not thoroughly described. It is unclear how many searches were composed on each database and in which combination the keywords listed were used. No, conclusions were not drawn regarding publication bias. Yes, overall findings were assessed for robustness in terms of selective inclusion or exclusion. Abstracted evidence was graded for strength, including risk of bias using the Grading of Recommendations, Assessment, Development, and Evaluation (GRADE) system.

3. Study Selection • Were inclusion criteria for selecting studies clearly described and fairly applied?	Yes, inclusion criteria were well described and include the following: study of adults age 18 years or older, must involve evaluation of intervention, and intervention must involve both ICU patients and any of the seven domains identified by the Robert Wood Johnson consensus panel. These criteria appear to be applied to the 37 articles included in the review.
4. Critical Appraisal • Was study quality assessed by blinded or independent raters? • Was the validity of included studies assessed? • Was the validity of studies assessed appropriately? • Are the validity criteria reported?	No, study quality was not assessed by blinded or independent raters. Four of the six authors assessed quality of the publication. No, the validity included studies was not assessed, however threats validity was mentioned, and include that the title, abstract, and study screening were completed by a single author, therefore kappa or inter-reviewer reliability of the study selection can't be assessed. No, the validity of studies was not assessed appropriately. There was no discussion of external validity, internal validity, or construct validity of any of the studies included in the review. No, the validity criteria are not reported.
5. Similarity of Groups and Treatments • Were reasons given for any differences between individual studies explored? • Are treatments similar enough to combine? • Do the included studies seem to indicate similar effects? • If not, was the heterogeneity of effect assessed and discussed?	Yes, the authors provided reason for differences in one of the studies explored. Because one of the studies contrasted two different interventions against a single control, the two interventions were analyzed separately. Although there were 37 articles, only 36 interventions were analyzed. Yes, the intervention being explored are generalized to palliative care. Although there are many interventions included in the studies of this review, they all involve palliative care. Yes, the included studies do seem to indicate similar effects. Although there were numerous outcome measures, the four most frequently used outcomes including ICU LOS, hospital LOS, family satisfaction, and mortality, indicate similar effects. Yes, the heterogeneity of the effect was discussed. Due to wide heterogeneity in the interventions evaluated and the outcomes measured, the overall study quality using criteria adapted from the U.S. Preventive Services Task Force could not be assessed. There were over 40 different validated and unvalidated metrics used for outcome measures
6. Data Synthesis • Were the findings from individual studies combined appropriately? • Are the methods used to combine studies reported? • Was the range of likely effect sizes presented?	No, the findings from individual studies were not combined appropriately. Due to the heterogeneity of the outcomes and interventions, statistical tests were not performed. No, the methods used to combine studies are not reported. Studies were assessed narratively, because studies weren't combined. No, the range of likely effect sizes were not presented. No, null findings were not interpreted and discussed.

• Were null findings interpreted carefully? • Were the methods documented? • Are review methods clearly reported?	Yes, methods were documented of how comparisons were made. The wide variety of outcome measures made comparing studies challenging, however using the four most common measures allowed for a partial comparison of the studies. No, the review methods are not clearly reported.
7. Summary of Findings • Is a summary of findings provided? • Are specific directives for new research proposed? • Were the conclusions supported by the reported data? • Are the recommendations based firmly on the quality of the evidence presented?	Yes, a summary of relevant findings is provided. Yes, specific directives for new research are proposed. One of the proposals for future research involves implementation of a well-designed multicenter controlled trial evaluating proactive palliative care in the ICU compared to standard ICU care. Another directive for future research involves the development and validation of metrics for palliative care related outcomes. Yes, the conclusions are supported by the data reported: integrative palliative care interventions can decrease hospital and ICU LOS, do not affect satisfaction rates, and do not increase or decrease mortality rates. No, the recommendations are not based firmly on the quality of evidence presented. There aren't any statistical comparisons amongst studies, limiting the quality of the evidence.
Citation: Pringle, J., Johnston, B., & Buchanan, D. (2015). Dignity and patient-centered care for people with palliative care needs in the acute hospital setting: A systematic review. *Palliative Medicine, 29*(8), 675-694. doi: 10.1177/ 0269216315575681	
1. Research Question • Does the review address a clearly defined issue? • Does the review describe: • i. the population studied? • ii. the intervention/treatment given? • iii. the outcome(s) considered? • Is the review question clearly and explicitly stated?	Yes, the review addresses a clearly defined issue: Patients receiving palliative care in the acute care setting are at a higher risk of having their dignity violated, therefore enhancing their dignity and preserving their care is of high importance. Yes, the review describes the population: adult patients age ≥18 requiring palliative care needs in the acute care setting, healthcare providers or family members/caregivers of patients with palliative care needs in acute care setting. Yes, the review describes the intervention: Interventions for included studies are included in Table 1. No, the review does not describe the outcomes considered in the research question/ statement. No, the review question is not clearly stated: There is not a specific PICOT question stated, however it is stated that the article examines international evidence relating to dignity and person-centered care for people with palliative care needs in the acute care hospital setting.
2. Literature Review • Were comprehensive search methods used to locate studies?	No, comprehensive search methods were not used. Seven electronic databases were searched. Yes, a thorough search of appropriate databases was conducted. The search terms were organized into four pillars of interest including population, situational, diagnostic, and intervention. This

• Was a thorough search of appropriate databases done? • Were other potentially important databases explored? • Were the search methods thoroughly described? • Were conclusions drawn about the possible impact of publication bias? Were the overall findings assessed for their robustness in terms of the selective inclusion or exclusion of doubtful or biased studies?	search strategy was formed in MEDLINE first, and then used for other databases included in the search. No, other potentially important databases were not searched. MEDLINE, CINAHL, PsychINFO, ASSIA, Embase, Cochrane Database, and the Web of Science were included. Google Scholar, PubMed, and ProQuest could have resulted in a more extensive search. Yes, search methods were thoroughly described. Appendix B displays the Preferred Reporting of Systematic Reviews and Meta-Analysis (PRISMA) flowchart and key words are described in Appendix 1. No, conclusions were not drawn regarding publication bias. It is stated that the papers were assessed independently by two reviewers. Yes, overall findings were assessed for robustness in terms of selective inclusion or exclusion. The Critical Appraisal Skills Program (CASP) tools were used to evaluate methodological quality.
3. Study Selection • Were inclusion criteria for selecting studies clearly described and fairly applied?	Yes, inclusion criteria were well described and include the following: Adults ≥ 18 years of age with palliative care needs, acute care setting; healthcare providers or family members/caregivers of people with palliative care needs and studies relating to dignity or person-centered care. These criteria appear to be applied to the 33 articles included in the review.
4. Critical Appraisal • Was study quality assessed by blinded or independent raters? • Was the validity of included studies assessed? • Was the validity of studies assessed appropriately? • Are the validity criteria reported?	Yes, study quality was not assessed by blinded or independent raters. The papers were assessed independently by two reviewers; however, it does not state if the reviewers were authors of this review or not. No, the validity included studies was not assessed. No, the validity of studies was not assessed appropriately. There was no discussion of external validity, internal validity, or construct validity of any of the studies included in the review. No, the validity criteria are not reported.
5. Similarity of Groups and Treatments • Were reasons given for any differences between individual studies explored? • Are treatments similar enough to combine?	Yes, the authors provided reason for differences in one of the studies explored. Two of the studies involved the same cohort of participants with results from different perspectives. Those studies will be grouped together as one. Although there were 33 articles, only 31 of them were analyzed. There was also a data extraction sheet that was used to compare studies shown in Appendix 2. No, the treatments are not similar enough to combine. Because of the differences in studies, 3 sub-groups were created including patients, family members/caregivers, and healthcare staff. Yes, the included studies do seem to indicate similar effects in the three subgroups. In the studies which evaluated the patient's perspectives, patient privacy, pain, impaired communication, staff

• Do the included studies seem to indicate similar effects? • If not, was the heterogeneity of effect assessed and discussed?	attitudes, and feelings of distress/anxiety all influenced patients' dignity. Family perspectives included need for bereavement support and staff approaches and models of care. Healthcare staff believed that promotion of privacy and symptom management were most important in promoting and maintain patient dignity. Heterogeneity of effect assessed was not discussed.
6. Data Synthesis • Were the findings from individual studies combined appropriately? • Are the methods used to combine studies reported? • Was the range of likely effect sizes presented? • Were null findings interpreted carefully? • Were the methods documented? • Are review methods clearly reported?	No, the findings from individual studies were not combined appropriately. Due to the studies included in the review, statistical tests were not performed. Yes, the methods used to combine studies are reported. Studies were sub-divided into groupings to reflect participant views which included patients, family members/caregivers, and healthcare staff. No, the range of likely effect sizes were not presented. No, null findings were not interpreted and discussed. Yes, methods were documented of how comparisons were made. A data extraction tool was used tool was used to compare studies. Studies were also sub-divided into groupings to reflect participant views which included patients, family members/caregivers, and healthcare staff allowing for partial comparison of the studies. No, the review methods are not clearly reported.
7. Summary of Findings • Is a summary of findings provided? • Are specific directives for new research proposed? • Were the conclusions supported by the reported data? • Are the recommendations based firmly on the quality of the evidence presented?	Yes, a summary of relevant findings is provided. No, there are not specific directives for new research proposed. Yes, the conclusions are supported by the data reported: Healthcare staff require adequate training, supports, and promotion of healthy environment for patients receiving palliative/end of life care in the acute care setting. No, the recommendations are not based firmly on the quality of evidence presented. There aren't any statistical comparisons amongst studies, limiting the quality of the evidence. Most of the papers in the review achieved a moderate quality score using the CASP system.

Appendix I1

Theme Matrix

Article	Overall Themes and/or Findings									Interventional Themes		
	Benefits of PC in ICU	**Barriers to PC**	**LOS/readmissions**	**Advance directives/ clarified goals**	**Mortality**	**Patient/Family Satisfaction**	**Resource utilization/costs**	**Communication/Consultation**	**Moral Distress/Staff morale/Empowerment**	**Education modules**	**Survey**	**Triggers**
Abbasi et al., 2019						X	X		X	X	X	
Altaker, Howie-Esquivel, & Cataldo, 2018									X, MDS-R correlated with empowerment, p = 0.02 and ethical climate scores p < 0.001 (more empowerment=less distress)		X, MDS-R, PEI, and HECS	
Asayesh et al., 2018									X, as perception of futile care increased and length of experience increased, moral distress increased, p = 0.03, and p = 0.02		X, Futile Care Perception Questionnaire, Jameton's Moral Distress questionnaire	
Aslakson et al., 2014	X		X, 13/21 studies found (62%)		X, increased 1/16 (6%), decreased 1/16 (6%), no change 14/16 (88%)	X, none decreased, 1/14 increased (7%)				X		X
Aslakson, Curtis, & Nelson, 2014	X	X		X		X		X	X, conflict between physicians and nurses about goals of care, burnout	X, for all providers about inclusion of PC-specifies surgeons		X, met by 14-20% of patients
Baker, Luce, & Bosslet, 2015	X	X	X	X	X, no increase noted	X	X	X	X	X	X	X
Braus et al., 2016			X, decreased (p < 0.001)	X	X, unchanged	X, decreased PTSD symptoms, p = 0.09		X, time to family meeting shorter, p < 0.001				X, built into rounds
Browning, 2013									X, correlation between psychological empowerment and		X, MDS, PET	

Article	Overall Themes and/or Findings									Interventional Themes		
	Benefits of PC in ICU	**Barriers to PC**	**LOS/readmissions**	**Advance directives/ clarified goals**	**Mortality**	**Patient/Family Satisfaction**	**Resource utilization/costs**	**Communication/Consultation**	**Moral Distress/Staff morale/Empowerment**	**Education modules**	**Survey**	**Triggers**
									moral distress, $p < 0.01$			
Cox, Handy, & Blay, 2012	X	X	X	X	X, not increased	X	X	X	X, increased job satisfaction, collaboration decreases stress			
Creutzfeld et al., 2015	X	X, author bias- "ICU MDs give PC"	X, increased, $p = .002$	X	X, more deaths or D/C to hospice, $p = .03$	X		X, 62% had unmet PC needs, $p = .019$ to have family meeting				X, tool during rounds
Fedel, Joosse & Jeske, 2013	X	X							X, $p = 0.005$ improved RN comfort with PC need identification	X, on PC in ICU	X, Comfort and Knowledge	X, PPSv2
Finkelstein et al., 2016	X	X	X, readmission to ICU correlated with death, 0R 19.41		X, death or DC to hospice all triggers significant $p < .001$							X, 25% met 1+ trigger
Gade et al., 2008	X		X, reduction in readmissions, $p = .04$	X		X, increased, $p = .04$	X, reduction, $p = .001$	X, increased, $p < .001$			X, surveyed families who had PC consult	X, MDs considered pts for PC consult based on criteria
Hiler et al., 2018									X, as environment worsens, moral distress increases, $p < 0.001$		X, MDS-R. PES-NWI	
Hua et al., 2014	X		X, most commonly met trigger (37.1%)		X, admissions who met trigger higher, $p = 0.0001$							X, 1/7 met trigger (13.8)
Jones & Bernstein, 2017	X			X, 74.1% agreed			X, futile care avoided, 58% agreed	X, 93.3% agreed	X, 64.5% felt PC consult benefitted providers/nurses		X	X, EMR alert
Kavalieratos et al., 2016	X			X	X, mixed results	X, QOL, symptom burden improved, 7/11 improved	X, 11/24 reported decreased					
Lapp & Iverson, 2015	X		X		X, # trigger met predicted							X, 22 item list from CAPC,

Article	Overall Themes and/or Findings									Interventional Themes		
	Benefits of PC in ICU	**Barriers to PC**	**LOS/readmissions**	**Advance directives/ clarified goals**	**Mortality**	**Patient/Family Satisfaction**	**Resource utilization/costs**	**Communication/Consultation**	**Moral Distress/Staff morale/Empowerment**	**Education modules**	**Survey**	**Triggers**
					death, $p < .001$							88% met at least 1
McCamey, 2017	X, increase in RN agreement that PC beneficial in ICU, p=0.004							X, increase in RN comfort requesting consult, $p = .01$	X, increase in RN comfort in identifying pts with PC needs, $p = .001$	X, on PC in ICU	X, Comfort and Knowledge	X, CAPC 22 Item list, 71.4% met 1+
NCP, 2018	X	X	X	X	X	X	X	X	X	X		X
Nelson et al., 2011	X	X				X	X	X	X, RNs important in advocating for PC	X, for providers and RNs		
Nelson et al., 2013	X		X	X	X	X	X		X, all staff stakeholders in trigger selection	X		X
Norton et al., 2007	X		X, decreased in MICU, $p < .001$, overall hospital LOS not sig $p = .5$		X, no difference found			X, time to consult decreased				X, 26% admissions met 1+ trigger
Perrin & Kazanowski, 2015	X	X	X, decreased, fewer readmissions	X	X		X, decreased	X	X, increased with PC, nurse involvement very important	X		X
Pringle, Johnston, & Buchanan, 2015	X	X				X		X	X	X		
Sihra, Harris, & O'Reardon, 2011	X							X, consults increasing by 113% in MICU, 51% in SICU				X
Weissman & Meier, 2011	X	X	X, indicator of pt outcomes	X	X	X, perception that family needs	X, increasing care requirements	X	X	X, needed to increase PC utilization		X
Wolf, 2016	X							X	X, $p = 0.07$ for poor RN involvement in decisions and distress	X, ELNEC training decreases, $p = .02$		X
Zalenski et al., 2014	X		X, increased with more triggers met, $p < .001$		X, increased with more triggers met, $p < .001$			X		X		X

Appendix I2

Suggested Education Topics and Methods

Article	Delivery Method	Topic(s)	Audience
Aslakson et al., 2014			
Aslakson, Curtis, & Nelson, 2014	Varied- online learning to multiple day face-to-face courses (A) 2.5-day course (B) "Intensive course", delivery not specified (C) Not specified (D) Not specified (E) 1-day workshop (F) 2-day course (G) 90-minute program	Communication skills training, ethics, conflict resolution (A) Harvard Medical School- how to offer high quality PC to ICU patients (B) University of Pittsburgh- "Critical care Communication" (C) "Program to Enhance Relational and Communication Skills- communication for pediatric, value-based, end-of-life conversations (D) "IntensiveTalk Program"- PC communication skills (E) Skills needed to actively and effectively participate in interdisciplinary meetings with families (F) ELNEC training (G) How to enhance communication with ICU families	All ICU healthcare providers, specifies surgeons most in need (A) Intensivists, hospitalists (B) Physicians (C) Pediatric critical care providers (D) ICU clinicians (E) ICU nurses (F) ICU nurses (G) Multidisciplinary team
Baker, Luce, & Bosslet, 2015	Not specified, table with different resources for tools and information provided from various websites	When PC is appropriate and what it provides, communication skills, how to use screening tools	All ICU healthcare providers
Fedel, Joosee & Jeske, 2013	30-minute information session held at a staff meeting	Use of PC in conjunction with ICU care, how to use screening tool- Palliative Performance Scale version 2	ICU nurses
McCamey, 2017	2-week education period, mixed methods- education materials distributed via email, in-person	Use of PC in conjunction with ICU care, use of CAPC screening tool	Neuro ICU nurses

	education provided but time not specified		
NCP, 2018	Not specified	How to provide quality PC, primary PC skills	All ICU healthcare providers
Nelson et al., 2011	Varied- 2-day ELNEC training, online learning resources such as IPAL-ICU website	Integrating PC in ICU care, ELNEC training	Dependent on method but something for all ICU healthcare providers
Nelson et al., 2013	Not specified	Use of trigger-based screening tools	Not specified
Perrin & Kazanowski, 2015	Not specified	When PC is appropriate, what PC provides, primary PC skills, difficult conversations	All ICU healthcare providers, specifically nurses
Pringle, Johnston, & Buchanan, 2015	Not specified	Discussion of case studies, end-of-life care, communication, different models of PC provision	All healthcare providers
Weissman & Meier, 2011	Not specified	Primary PC provision, how to recognize patients with PC needs, use of trigger-based screening tools	All healthcare providers
Wolf, 2016	2-day ELNEC course, or similar programs	ELNEC training	Nurses
Zalenski et al., 2014	Not specified	PC use in conjunction with ICU care, how to use screening tool	ICU nurses

Appendix J

Levels of Effectiveness Grading System

Grading	Rationale
Effective	Research validates the effectiveness of the nursing activity or intervention, preferably with Level I or with Level II evidence.
Possibly Effective	There are some research studies that validate the effectiveness of the nursing activity or intervention, but with insufficient strength to recommend that nurses institute the activity or intervention at this time. Generally, more research is needed.
Not Effective	Research has shown that the nursing activity or intervention is not effective and generally should not be used.
Possibly Harmful	There are some studies that show harm to clients when using the nursing activity or intervention, and the nurse should evaluate carefully whether the activity is ever appropriate.

Ackley, B. J., Swan, B. A., Ladwig, G., & Tucker, S. (2008). Evidence-based nursing care guidelines: Medical-surgical interventions. (p. 7). St. Louis, MO: Mosby Elsevier.

Appendix K

Summary of Effectiveness Table

Intervention	**References***	**Level of Effectiveness**
Use of a 2-hour empowerment workshop for ICU nurses to decrease moral distress	Abbasi et al., 2019	Effective
Inclusion of a PC clinician during rounds with ICU team to screen each patient for PC needs	Braus et al., 2016	Possibly Effective
Trigger-based screening tool reviewed during daily rounds	Creutzfeldt et al., 2015	Possibly Effective
Education about PC use in ICU and screening tool use; trigger-based screening tool; pre- and post-intervention surveys	Fedel et al., 2013	Possibly Effective
Trigger-based screening tool used during daily rounds	Finkelstein et al., 2016	Possibly Effective
Provision of PC to interventional group and usual care given to another	Gade et al., 2008	Effective
Education about PC use in ICU and screening tool use; trigger-based screening tool used during daily rounds; pre- and post-intervention surveys	McCamey, 2017	Possibly Effective
Trigger-based screening tool used within 72 hours of admission	Norton et al., 2007	Possibly Effective
Trigger-based screening tool used at time of admission	Sihra et al., 2011	Possibly Effective
Education given to nurses about screening tool use; trigger-based screening tool used at time of admission	Zalenski et al., 2014	Possibly Effective

Ackley, B. J., Swan, B. A., Ladwig, G., & Tucker, S. (2008). Evidence-based nursing care guidelines: Medical-surgical interventions. (p. 7). St. Louis, MO: Mosby Elsevier.

* Refer to Appendix C

Appendix L

Analysis of Utility and Feasibility

Intervention	Citation(s)	Finding(s)	Fit with Setting	Fit with Sample	Feasibility of Implementation	Benefits	Risks	Resources Needed
A 2-day moral empowerment workshop was held with an experimental group of critical care nurses to see if they had reduced rates of moral distress.	Abbasi, S., Ghafari, S., Shahriari, M., & Shahgholian, N. (2019). Effect of moral empowerment program on moral distress in intensive care unit nurses.	A significant reduction in moral distress in the experimental group ($p < 0.05$) was found 1 month after the intervention	Intervention can be applied in the ICU setting.	Intervention can be applied to ICU nurses.	The workshop was held over 2 days (6 hours per day) on site at the hospital and specialty instructors were brought in. Surveys were filled out by the nurses who participated in both the experimental and control groups to measure moral distress. Given that this intervention only effects nurses, not patients, and significant resources are needed, it is likely not feasible.	Nurses can directly benefit from dedicated time and education focusing on their experiences as ICU nurses and tools on how to overcome the stresses they face.	There are no associated risks.	Printing capabilities, paper, space for workshop, allocated money for paying nurses for attendance, internet access for survey taking, other nurses to cover shifts for participating nurses, specialty instructors.
MDS-R survey was given to 238 critical care nurses to evaluate relationships between ICU nurses' moral distress, perceived psychological empowerment, ethical climate of the ICU, and access to PC.	Altaker, K.W., Howie-Esquivel, J., & Cataldo, J.K. (2018). Relationships among palliative care, ethical climate, empowerment, and moral distress in intensive care unit nurses.	Mean MDS-R score was moderately high and had positive correlation with nurse empowerment.	Intervention can be applied in the ICU setting.	Intervention can be applied to ICU nurses.	Survey was given to nurses online. To enhance amount of participation surveys will be given to nurses in a paper form. Incentives will be used to enhance participation with drawings for gift cards and handing out snacks for each survey completed.	Survey can be used to compare baseline data prior to completion of online education and nurse-led PC screening tool, and after implementation period to determine if nurses feel more empowered.	There are no associated risks.	Printer, paper, snacks, gift cards, volunteers for nurse-led PC screening tool champions, lock box for completed surveys.

The Futile Care Perception Questionnaire and Jameton's Moral Distress Questionnaire were administered to 117 ICU nurses to evaluate relationship between futile care perception and moral distress.	Asayesh, H., Mosavi, M., Abdi, M., Masoud, M. P., & Jodaki, K. (2018). The relationship between futile care perception and moral distress among intensive care unit nurses.	As nurses' perception of futile care and work experience increased, their moral distress was increased significantly ($p = 0.03$; $p = 0.02$)	Intervention can be applied in the ICU setting.	Intervention can be applied to ICU nurses.	Surveys were administered to ICU nurses of a few different hospitals. Surveys will be given to all ICU nurses on the 4 different ICU units at the medical center. These particular surveys useful for background but not for post-intervention surveys.	Surveys can be used to determine baseline amount of moral distress suffered by the nurses as well as determine what they perceive to be futile care.	There are no associated risks.	Printer, paper, snacks, gift cards, volunteers for nurse-led PC screening tool champions, lock box for completed surveys.
Trigger-based PC intervention which involved a PC clinician rounding with the ICU team, and informing the team if patients meet PC screening criteria.	Braus, N., Campbell, T.C., Kwekkeboom, K.L., Ferguson, S., Harvey, C., Krupp, A.E., Lohmeier, T., Repplinger, M.D., Westergaard, R.P., Jacobs, E.A., Roberts, K.F., Ehlenbach, W.J. (2016). Prospective study of a proactive palliative care rounding	Family meeting time was 41% shorter. LOS shorter, $p < 0.001$ Mortality unchanged.	Intervention can be applied in the ICU setting.	Intervention can be applied to critically ill adult patients ≥ 18 years old.	It will not be feasible to have a PC clinician take part in rounds of all ICU teams; however, the bedside nurses will be able to take the place of the PC clinician used in this study. They can recommend the PC consult based on the evidence-based screening criteria.	Use of evidence-based PC screening criteria can help support integration of PC in ICU patient care. There is no harm associated with PC integration in ICU patients. PC can help reduce moral distress for ICU nurses.	There is risk of physician resistance to the PC-nurse led screening tool.	Computer, software for creating learning module, paper screening tool.

	intervention in a medical ICU.							
MDS-32 was given to 277 critical care nurses to determine the relationship between moral distress, psychological empowerment, and demographic data.	Browning, A.M. (2013). Moral distress and psychological empowerment in critical care nurses caring for adults at end of life.	Psychological empowerment was a significant predicator of moral distress frequency ($p < 0.01$).	Intervention can be applied in the ICU setting.	Intervention can be applied to critically ill adult patients ≥ 18 years old.	A 32-question survey would be difficult to gather participation as ICU nurses are quite busy. A shorter version of this survey would be more appropriate.	It is important to gather baseline data about ICU nurses' feelings of empowerment and moral distress to help assess the effectiveness of advocating for PC with the nurse-led screening tool.	There are no associated risks.	Printer, paper, snacks, gift cards, volunteers for nurse-led PC screening tool champions, lock box for completed surveys.
PC trigger-tool PNST reviewed for each patient during daily rounds to identify patients with unmet PC needs and to evaluate patient outcomes resulting from PC consultation.	Creutzfeldt, C.J., Engelberg, R.A., Healey, L., Cheever, C., Becker, K.J., Holloway, R.G., & Curtis, J.R. (2015). Palliative care needs in the Neuro-ICU.	Unmet needs identified in 62% of patients. PNST positive patients more likely to have family conference documented ($p = 0.019$) More deaths among PNST positive patients ($p= 0.03$) indicating PC needs correlated with increased risk of death.	Intervention can be applied in the ICU setting.	Intervention can be applied to critically ill adult patients ≥ 18 years old.	The PNST use during rounds takes the collaborative benefit away from nursing staff and is unlikely to occur if ICU providers left solely responsible to complete. ICU nurses can use other evidence-based screening tools to evaluate for PC needs.	Use of evidence-based PC screening criteria can help support integration of PC in ICU patient care. There is no harm associated with PC integration in ICU patients. PC can help reduce moral distress for ICU nurses by increasing collaboration.	There is risk of physician resistance to the PC-nurse led screening tool.	Computer, software for creating learning module, paper screening tool.
Survey was given to ICU	Fedel, P., Joosse, L.L., &	Significant improvement	Intervention can	Intervention can	Information gathered pre- and post- education	This survey provides a method	There are no	Printer, paper, snacks, gift

nurses to assess their knowledge and comfort in identifying patients with needs and requesting consults given pre- and post-intervention. Education was given on PC and the use of the PPSv2.	Jeske, L. (2013). Use of the Palliative Performance Scale version 2 in obtaining palliative care consults.	in nurses' comfort in identifying patients appropriate for PC ($p <$ 0.005). Statistically significant improvement in knowledge level regarding PC ($p =$ 0.027).	be applied in the ICU setting.	be applied to all ICU nurses.	intervention would be ideal to determine if PC education is beneficial. A survey is feasible for this project. The education piece would be different as it would not include use of the PPSv2. We will include education on the nurse-led screening tool we developed using evidence-based PC screening criteria gathered from the literature review.	of measurement before and after the implementation of the education piece of PC integration in ICU.	associated risks.	cards, volunteers for nurse-led PC screening tool champions, lock box for completed surveys.
SICU and PC clinicians created a list of PC triggers after conducting a literature review and used them during daily rounds.	Finkelstein, M., Goldstein, N.E., Horton, J.R., Eshak, D., Lee, E.J., & Kohli-Seth, R. (2016). Developing triggers for the surgical intensive care unit for palliative care integration.	25% of ICU patients that were screened, had a PC consult.	Intervention can be applied in the ICU setting.	Intervention can be applied to critically ill adult patients ≥ 18 years old.	Literature review has been completed. A list of the most common PC triggers from the literature review has been created.	Can increase the number of PC consults. Identify patients that need PC integration sooner.	No associated risks identified.	Computer, access to electronic databases, leadership support.
PC provided to interventional group of patients and usual care given to control group. Surveys used to determine patient and family	Gade, G., Venohr, I., Conner, D., McGrady, K., Beane, J., Richardson, R.H. & Penna, R.D.(2008). Impact of an inpatient palliative care team: A	Satisfaction with care experience improved ($p =$ 0.04) Reduction in healthcare expenditure ($p =$ 0.001)	Intervention can be applied in the ICU setting.	Intervention can be applied to critically ill adult patients ≥ 18	This intervention solely looks at the benefits of PC provision. The findings that PC is beneficial is already assumed in this project, so this intervention is not necessary. The increase of PC provision is the goal.	PC has demonstrable benefits for ICU patients.	No associated risks identified with PC provision.	None.

satisfaction with care.	randomized control trial.	Reduction in ICU readmissions ($p = 0.04$)		years old.				
Two surveys including the MDS-R and PES-NWI were given to evaluate moral distress and nurse perceptions of the practice environment in ICU nurses.	Hiler, C. A., Hickman, J. R. L., Reimer, A. P., & Wilson, K. (2018). Predictors of moral distress in a U.S. sample of critical care nurses.	As the practice environment deteriorates, moral distress in nurses increases ($p < 0.001$).	Intervention can be applied in the ICU setting.	Intervention can be applied to ICU nurses.	These surveys may require too much time for nurses to complete in the ICU, therefore a shorter version of these surveys would be more appropriate.	Moral distress is significantly associated with job dissatisfaction, burnout, decreased productivity, and higher turnover rates. Incorporating PC can help reduce moral distress.	There are no associated risks.	Printer, paper, snacks, gift cards, volunteers for nurse-led PC screening tool champions, lock box for completed surveys.
A database of 385,770 patients from a 7-year time period was reviewed to examine which PC triggers were most commonly met and indicative of a need for PC	Hua, M.S., Guohua, L., Blinderman, C.D., & Wunsch, H. (2014). Estimates of the need for palliative care consultation across United States intensive care units using a trigger-based model.	Between 1/7 and 1/5 patients met triggers for PC consult based on trigger set used. 13.8% met one or more triggers. LOS >10 days was most frequently met trigger.	Intervention can be applied it the ICU setting.	Intervention can be applied to critically ill adult patients ≥ 18 years old.	A database review this large is not feasible given the time commitment of this project. To determine which triggers are most appropriate at our institution, evidence-based criteria was reviewed and condensed to make our nurse-led screening tool.	Trigger based methods for PC consultation identify patients most in need of specialty PC services. Trigger based tools can help healthcare providers stratify patients.	No associated risks.	Computer, access to electronic databases, printer, internet.
Four PC triggers were put in place by workgroup. If criteria were met a BPA alert popped up in patient's	Jones, B., & Bernstein, C. (2017). Palliative care triggers in the intensive care unit: A pilot success story.	PC beneficial to patient and families 93.5%, improvement in communication, 93.3%,	Intervention can be applied in the ICU setting.	Intervention can be applied to critically ill adult	The development of PC triggers is feasible as the literature can be utilized to form EBP trigger criteria. It is more difficult to create an electronic feature in Epic for a BPA. This electronic feature has been attempted	PC trigger criteria can help identify patients in need of PC sooner which can be beneficial to patient and family satisfaction, improved	May experience some resistance from ICU physicians when recommen	Computer, electronic databases, paper for screening tool and survey, clipboard, lock box for

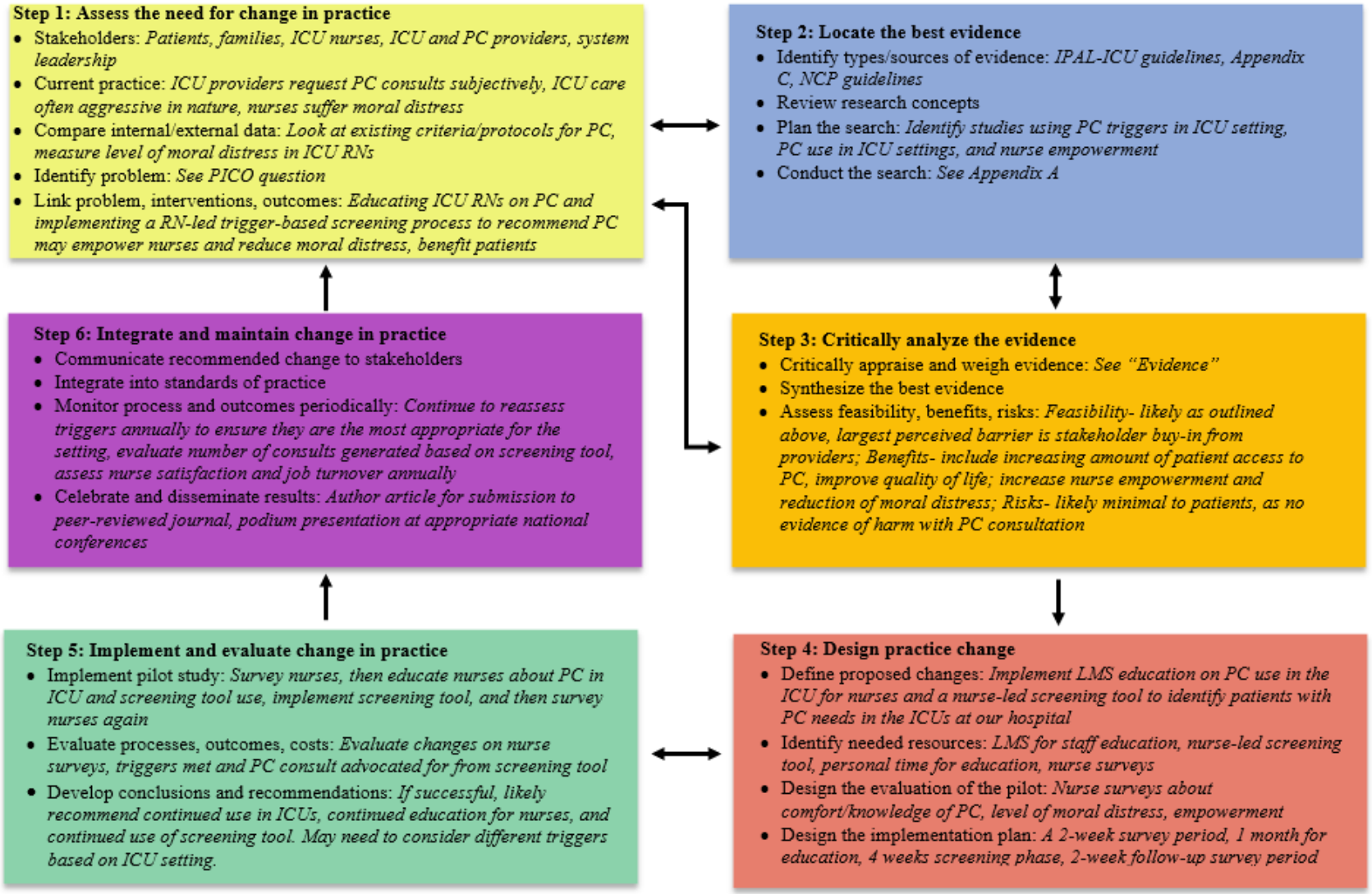
chart. Follow-up survey was given to providers and nurses about PC integration into ICU care.		goals clarified 74.1%, reduced need for futile treatment 58%, PC benefited providers/nurses personally 64.5%.		patients ≥ 18 years old. Surveys can be also be given to providers and nurses in ICU.	in the past at the facility and was carried out without success. Surveys to assess PC integration education and screening tool is feasible.	communication, and reduced need for futile treatment.	ding PC consults based on PC nurse-led screening tool.	completed surveys.
To assess the utilization of PC services in an academic medical center's ICU based on number of CAPC criteria met per patient; to determine the mortality rate in the ICU in relation to number of criteria met; to identify the most common criteria met during screening .	Lapp, E.A., & Iverson, L. (2015). Examination of a palliative care screening tool in intensive care unit patients.	88% of patients met at least 1 screening criteria, 19.8% received a PC consult.	Intervention can be applied in the ICU setting.	Intervention can be applied to critically ill adult patients ≥ 18 years old.	The use of CAPC criteria would not be feasible for the nurses to complete due to competing demands. A shorter version of evidence-based PC screening criteria would be more appropriate.	PC trigger criteria can help identify patients in need of PC sooner which can be beneficial to patient and family satisfaction, improved communication, and reduced need for futile treatment.	Risk of physician resistance to PC recommendation.	Computer, electronic databases, paper for screening tool and survey, clipboard, lock box for completed surveys.
The use of an education intervention and PC screening tool	McCamey, D.K. (2017). Comfort and knowledge: Nurse-driven	RNs felt more comfortable assessing for PC due to education	Intervention can be applied in the	Intervention can be applied to	The comfort and knowledge survey tool for nurses is the best survey tool found from the research reviewed. It is a succinct and validated tool	This survey would be easy to gather pre-and post-education data from nurses. It's a	May encounter some physician resistance	Computer, electronic databases, paper for screening tool

can increase nurses' comfort and knowledge in recommending PC consults.	palliative care screenings on admission to the neuro ICU (Doctoral dissertation).	intervention from 63% to 92%. RNs felt more comfortable requesting PC consult from provider 58% to 75%. 71.4% met 1 criterion, 5.7% met 2, 22.8% met 3 or more.	ICU setting.	criticall y ill adult patients ≥ 18 years old and for ICU nurses.	that would be easy and less time consuming for nurses to complete. The education piece is also feasible in that the education can be made easily accessible through the creation of an online learning module.	great way to evaluate the effectiveness of PC education in ICU population.	to PC recommen dation from nurses.	and survey, clipboard, lock box for completed surveys.
All ICU patient admissions were screened within 72 hours for PC consult criteria.	Norton, S.A., Hogan, L.A., Holloway, R.G., Temkin-Grenner, H., Buckley, M.J., Quill, T.E. (2007). Proactive palliative care in the medical intensive care unit: Effects on length of stay for selected high-risk patients.	26% of admission resulted in a positive PC screen. LOS in MICU decreased from 16.28 days in pre-group to 8.96 days in post-group.	Interven tion can be applied in the ICU setting.	Interven tion can be applied to criticall y ill adult patients ≥ 18 years old.	Screening all ICU patients within a 72-hour time frame would be challenging, but it would be more feasible within the ICUs at the institution to screen patients within 7 days of ICU admission.	Having a timeframe in place within the PC screening tool can help improve consultation rate of patients who have been in the ICU for one week. This has the potential to reduce ICU LOS.	Risk of physician resistance to PC recommen dation.	Computer, electronic databases, paper for screening tool clipboard.
Improve the utilization of PC by screening patients for PC consultations.	Sihra, L., Harris, M., O'Reardon, C. (2011). Using the improving palliative care in the intensive care unit (IPAL-ICU) project to promote palliative care	MICU PC consults increased by 113%. SICU PC consults increased by 51%.	Interven tion can be applied in the ICU setting.	Interven tion can be applied to criticall y ill adult patients	Implementing a screening tool for PC has already been completed through a thorough review of the literature and most common PC triggers. It will not be difficult to measure the amount of PC consults generated after	Reduced LOS in ICU. Earlier PC consultation.	Risk of physician resistance to PC recommen dation.	Computer, electronic databases, paper for screening tool clipboard.

	consultation. *Journal of Pain and Symptom Management, 42*(5), 672-675. doi: 10.1016/j.jpainsymman.2011.08.002			≥ 18 years old.	implementation of screening tool.			
All admissions to the MICU screened by an ICU nurse for the need for a PC consultation based on 7-item criteria-based tool. Education given to nurses about screening tool use.	Zalenski, R., Courage, C., Edelen, A., Waselewsky, D., Krayem, H., Latozas, J., & Kaufman, D. (2014). Evaluation of screening criteria for palliative care consultation in the MICU: a multihospital analysis.	Positive screen increased likelihood of PC consult ($p < 0.001$). Intensivists ordered PC consult for 1/3 of patients with positive screen. Higher screen correlated with longer LOS in hospital ($p < 0.001$), increased risk of mortality ($p < 0.001$)	Intervention can be applied in the ICU setting.	Intervention can be applied to critically ill adult patients ≥ 18 years old and education can be given to all ICU nurses about use of the screening tool	Intervention period was 16 weeks in this study, which is not feasible for our DNP project. Our projected intervention period is 4-6 weeks. Additionally, only admissions were screened. This misses patients who develop needs during their stay. Our project will include all patients daily. Education will be given on screening tool utilization through the online education module. The number of triggers included in the screening tool for this study is more nurse friendly, making it easier for nurses to complete before ICU team rounds.	Increase in PC consults generated. Educating nurses can help reinforce the importance of advocating for PC consults for patients meeting PC criteria and also empower them.	Risk of physician resistance to PC recommendation.	Computer, electronic databases, computer software to create online learning module, paper for screening tool and survey, clipboard, lock box for completed surveys.

Appendix M

Evidence-Based Practice Model Implementation Strategies



Appendix N

Triggers for Palliative Care in the Literature Review

	STUDY	SETTING	CRITERIA	NOTES
1.	Braus, N., Campbell, T.C., Kwekkeboom, K.L., Ferguson, S., Harvey, C., Krupp, A.E., Lohmeier, T., Repplinger, M.D., Westergaard, R.P., Jacobs, E.A., Roberts, K.F., Ehlenbach, W.J. (2016). Prospective study of a proactive palliative care rounding intervention in a medical ICU	MICU	**1) Metastatic/incurable malignancy** **2) LOS >10 days before ICU admit** **3) Mechanical ventilation >7 days** **4) ICU LOS >14 days** **5) 80 years old with 2+ chronic diseases** **6) s/p cardiac arrest** **7) Cerebral hemorrhage requiring mechanical ventilation** **8) ICU admit from long term care facility**	Integrative model, PC clinician screening patients
2.	Creutzfeldt, C.J., Engelberg, R.A., Healey, L., Cheever, C., Becker, K.J., Holloway, R.G., & Curtis, J.R. (2015). Palliative care needs in the Neuro-ICU.	Neuro ICU	**Screen questions:** **1) Does the patient have distressing physical/psychological symptoms?** **2) Are there specific social/support needs for patient/family?** **3) Have goals of care been identified and are treatment options matched with patient-centered goals?** **4) Are there disagreements with teams, family, or between those?**	Correlated their results with Norton et al triggers- met their triggers 46.3% of time Daily rounds
3.	Finkelstein, M., Goldstein, N.E., Horton, J.R., Eshak, D., Lee, E.J., & Kohli-Seth, R. (2016). Developing triggers for the surgical intensive care unit for palliative care integration.	SICU	**1) LOS>10 days** **2) ICU readmission** **3) Intensivist referral** **4) s/p cardiac arrest** **5) Metastatic/advanced cancer** **6) A match of 2+ secondary triggers:** **a. Glasgow Coma Scale < 9 (off sedation),** **b. Hypotension with vasopressor use > 12 hours** **c. End-stage liver disease: GFR < 30** **d. End-stage renal disease: MELD > 30** **e. Severe sepsis** **f. Any active cancer, excluding melanoma skin cancer** **g. Pre-existing tracheostomy, excluding head and neck cancer**	Integrated model (PC provider rounded with team daily) Secondary criteria less frequently statistically significantly related to death or DC to hospice

	STUDY	SETTING	CRITERIA	NOTES
4.	Hua, M.S., Guohua, L., Blinderman, C.D., & Wunsch, H. (2014). Estimates of the need for palliative care consultation across United States intensive care units using a trigger-based model.	Multiple; Database of ICU admissions from 2001-2008 from Project IMPACT-ICUs in US with >50 patients n = 385,770 admissions to 179 ICUs	**1) ICU admission after hospital LOS >10 days** **2) Age >80 w/ 2+ comorbidities** **3) Stage IV malignancy** **4) s/p cardiac arrest** **5) Dx of intracerebral hemorrhage with mechanical ventilation** **Secondary Triggers:** **family request, futility considered by medical team, advanced directive presence, family disagreement with each other or medical team, death expected within ICU stay, ICU LOS >1 month, diagnosis with median survival < 6 months, >3 ICU admissions during hospitalization, GCS < 8 for > 1 week in patient > 75 years, GCS = 3, multi-system organ failure with specific clinical criteria, global cerebral ischemia, advanced dementia**	1 in 7 pts met primary triggers, 1 in 5 met secondary Retrospective analysis
5.	Jones, B., & Bernstein, C. (2017). Palliative care triggers in the intensive care unit: A pilot success story.	Not stated-ICU only	**1) ICU stay > 2wks** **2) Stage IV malignancy** **3) Age > 75 with multisystem organ failure** **4) Stroke scale > 4**	Triggers built into EMR, fired practice alert from which provider could enter order
6.	Lapp, E.A., & Iverson, L. (2015). Examination of a palliative care screening tool in intensive care unit patients.	Not stated-ICU only	**1) Advanced stage IV cancer** **2) Multiorgan failure >2 organs** **3) Major acute neurological insult (CNS trauma, post-CPR encephalopathy, malignant stroke)** **4) Advanced dementia or severe cognitive impairment** **5) Intracranial hemorrhage requiring mechanical ventilation** **6) Chronic liver disease** **7) Chronic renal disease (+/- dialysis)** **8) s/p cardiac arrest** **9) Advanced COPD** **10) Severe CHF class III or IV** **11) Frequent hospital or ICU admissions (> 1 for same condition within 3 months)** **12) > 1 ICU admission during same hospital stay** **13) Admission from nursing home** **14) Consideration of PEG tube placement**	Screening tool found to be predictive of mortality based on number of criteria met Used Center to Advance Palliative Care's Screening Criteria Retrospective analysis

	STUDY	SETTING	CRITERIA	NOTES
			15) Consideration of tracheostomy placement **16) Consideration of ethics consult** **17) Consideration of CRRT during ICU stay** **18) Conflicts regarding goals, DNR order, treatment decisions** **19) Lack of social support, eg. Homelessness, chronic mental illness** **20) "No" answer to "surprise question: Would you be surprised if this patient died in the next 12 months?"** **21) Anticipated discharge to long-term acute facility** **22) Homebound due to chronic illness**	
7.	Norton, S.A., Hogan, L.A., Holloway, R.G., Temkin-Grenner, H., Buckley, M.J., Quill, T.E. (2007). Proactive palliative care in the medical intensive care unit: Effects on length of stay for selected high-risk patients.	MICU	**1) ICU admit with prior hospital LOS > 10 days** **2) Age > 80 years with 2+ comorbidities** **3) Active stage IV malignancy** **4) s/p cardiac arrest** **5) Diagnosis of intracerebral hemorrhage requiring mechanical ventilation**	Screened admissions only 26% admissions met positive screen
8.	Sihra, L., Harris, M., O'Reardon, C. (2011). Using the improving palliative care in the intensive care unit (IPAL-ICU) project to promote palliative care consultation.	MICU, SICU	**1) 70+ years with 2+ comorbidities** **2) Stage IV cancer** **3) Mechanical ventilation > 7+ days** **4) Exceed expected LOS by >50%** **5) Misc. areas of concern (long LOS, poor prognosis)**	Resulted in overall increase in PC consults, but only 35.5% of patients with positive screen received consult Screened admissions only
9.	Weissman, D.E., & Meier, D.E. (2011). Identifying patients in need of a palliative care assessment in the hospital setting: A consensus report from the Center to Advance Palliative Care.	Any ICU setting	**ADMISSION SCREENING CRITERIA:** **A potential life-limiting or life-threatening condition *and*…** **Primary criteria:** **1) The "surprise question": you would not be surprised if patient died within 12 months"** **2) Frequent admissions (more than one for same condition within several months)** **3) Admission prompted by difficult-to-control physical or psychological symptoms**	CAPC developed 2 sets of criteria; first to be used on admission, another daily rounds Primary criteria are global indicators, represent minimum screening criteria Secondary criteria are more specific indicators

	STUDY	SETTING	CRITERIA	NOTES
			4) Complex care requirements (functional dependency, home support for ventilator/antibiotics/feedings) **5) Decline in function, feeding intolerance, or unintended decline in weight (failure to thrive)** **Secondary criteria:** **1) Admission from LTC** **2) Elderly patient, cognitively impaired with acute hip fracture** **3) Metastatic or advanced incurable cancer** **4) Chronic home O2 use** **5) Out-of-hospital cardiac arrest** **6) Current or past hospice enrollee** **7) Limited social support (family stress, chronic mental illness)** **8) No history of completing advanced care planning** **DAILY SCREENING CRITERIA** **Primary Criteria** **1) The "surprise question": you would not be surprised if patient died within 12 months"** **2) Difficult-to-control physical or psychological symptoms** **3) ICU LOS > 7 days** **4) Lack of goals of care clarity and documentation** **5) Disagreements or uncertainty among the patient/staff/family concerning treatment decisions, resuscitation preferences, use of nonoral feeding/hydration** **Secondary Criteria** **1) Awaiting or deemed ineligible for solid-organ transplant** **2) Pt/family emotional, spiritual, relational distress** **3) Pt/family request for PC/hospice** **4) Pt is considered a candidate for: feeding tube, tracheostomy, CRRT, ethics concerns, LVAD or AICD, LTAC disposition, bone marrow transplant**	of high likelihood of unmet PC needs

	STUDY	SETTING	CRITERIA	NOTES
10.	Zalenski, R., Courage, C., Edelen, A., Waselewsky, D., Krayem, H., Latozas, J., & Kaufman, D. (2014). Evaluation of screening criteria for palliative care consultation in the MICU: a multihospital analysis	MICU	**1) Admitted from skilled nursing facility, LTAC, vent LTC, or homecare with private duty nursing/ADL dependencies** **2) End-stage dementia, ALS, Parkinson's, or MS** **3) Large intracranial hemorrhage with anoxic encephalopathy, or on ventilator** **4) Advanced or metastatic cancer** **5) s/p cardiac or respiratory arrest** **6) Hospital LOS > 5 days, or ICU readmission with same dx within 30 days**	35.3% of admissions met criteria Criteria significantly correlated with longer hospital and MICU LOS, and risk of inpatient mortality or hospice discharge

Appendix O

Screening Tool Development

Trigger	Source(s)*	Commentary
ICU length of stay > 10 days or ICU readmission within same hospitalization	1; 3; 4; 5; 6; 7; 8; 9; 10	LOS > 10 days unless noted: 5. 2 weeks; 8. “exceeded expected LOS by > 50%”; 9. 7 days; 10. 5 days
Age >75 years old + 2 chronic conditions	1; 4; 5; 7; 8; 9	Age 75 years unless noted: (1. 80yrs; 4. 80 years; 7. 80yrs; 8. 70yrs; 9. “elderly”. Some included or did not include 2 comorbidities or had other qualifications (ie. multisystem organ failure)
Admitted from skilled nursing facility, LTACH, or with multiple ADL dependencies	1; 4; 6; 9; 10	4 has secondary criteria of advanced dementia, inferring ADL dependency
Vent > 7 days, Pre-trach or PEG	1; 6; 8; 9	
A perceived need for goals of care discussion	2; 3; 4; 6; 8; 9	Multiple wordings accepted; perceived need inclusive of family, patient, or healthcare provider

1. Braus et al. (2016), 2. Creutzfeldt et al. (2015), 3. Finkelstein et al. (2016), 4. Hua et al. (2014), 5. Jones et al. (2017), 6. Lapp et al. (2015), 7. Norton et al. (2007), 8. Sihra et al. (2011), 9. Weissman et al. (2011), 10. Zalenski et al. (2014) ***See Appendix C for full citations***

Appendix P

Nurse-led Screening Tool for Palliative Care in the ICU

ICU SERVICE: **DATE:**

Nurse-led ICU Screening Tool for Palliative Care

Prior to AM rounds, please assess if your patient meets any of the following criteria. Please check the box, if indicated.

Triggers for Palliative Care	Trigger met?
ICU length of stay > 10 days or ICU readmission within same hospitalization	
Age >75 years old + 2 comorbidities	
Admitted from skilled nursing facility, LTACH, or with multiple ADL dependencies	
Vent > 7 days, Pre-trach or PEG	
A perceived need for goals of care discussion by any member of the patient's care team, including the patient and their family	

If your patient meets 1 or more criteria, please inform the provider during AM rounds and ask if they would like to order a Palliative Care Consult.

Does your patient meet any of the above criteria?	***YES***	***NO***
Was a Palliative Care consult recommended?	***YES***	***NO***
Was a Palliative Care consult ordered?	***YES***	***NO***

Any insight into your experience is appreciated. If Palliative Care was declined by the provider, was any insight given as to why?

Appendix Q

Facilitators and Barriers of Project Implementation

Facilitators	Barriers
• PC already exists in some form in ICU setting, so all staff are familiar with process and providers • ICU nurses engaged as they generally highly regard PC for complex patients, already request consultation from providers • Institution has an existing robust consultation-based PC team in place with skilled providers • PC providers and ICU intensivists have existing working relationship • Dissemination of evidence supporting PC utilization in ICU, triggers • Rounding tool already in use in ICUs, PC triggers sheet is a small addition • Education via LMS about PC in ICU, triggers for PC, and how to use rounding tool • Rounding tool with PC trigger sheet low cost (printing only) • Triggers allow some burden to be lifted from ICU intensivists for ordering PC and feeling like they are "giving up" on patient • Likely family and patient satisfaction increase • Lessened moral distress for everyone if patients having better symptom management and goals of care clearly defined early on • Decreased futile resource utilization	• ICU providers may resist nurse suggestion of PC due to feeling that it is unnecessary and that they are capable of meeting all of their patients' needs • Not all ICU providers may feel each trigger is best suited to their ICU setting • Some ICUs do not use rounding sheet as consistently as others • ICU culture generally is one of aggressive care and life-saving measures; a culture shift may be needed • Team members may have different opinions and values regarding PC consultation ▪ Some outcomes (as evidenced by literature) may not be visible for a longer amount of time (i.e., lengths of stay averages may not be seen until enough data is collected) • Criteria may require one or more revisions to be most appropriate • Criteria may identify too many patients and PC providers may not be able to meet the demand of consultations • Nurses must continue to participate in project over multiple steps • Family resistance to PC

Appendix R

Outcome Measures

Outcome	**Data Collection**	**Measure**
Do nurses have increased knowledge and comfort with PC?	PC-ICU Survey NL-PCST	Pre/post PC-NLST mean scores Qualitative evaluation of themes in the commentary boxes
Do nurses feel more empowered to advocate for a PC consult?	PC-ICU Survey	Pre/post PC-NLST mean scores

Secondary Outcome	**Data Collection**	**Measure**
How many patients meet evidence-based triggers?	NL-PCST	How many patients met triggers/how many NL-PCST completed (%)
How many consults were placed from patients meeting evidence-based trigger criteria?	NL-PCST • Was a consult recommended? (yes/no) • Was a consult ordered? (yes/no)	Number of consults ordered/number of consults recommended (%)

Appendix S

Palliative Care in the ICU Survey (PC-ICU)

DEMOGRAPHIC QUESTIONS:

PRE ONLY:

Have you ever had specialized education about Palliative Care as part of your nursing degree program, job training, etc.?
Yes
No

POST ONLY:

Did you complete the Palliative Care in the ICU LMS related to this project?
Yes
No

How long have you been a Registered Nurse?

a.	0-5 years
b.	5-10 years
c.	11-15 years
d.	16-20 years
e.	More than 20 years

How many years have you worked in the ICU?

a.	0-5 years
b.	5-10 years
c.	11-15 years
d.	16-20 years
e.	more than 20 years

What shift do you most frequently work (please select one only)?

a.	Day
b.	Evening
c.	Night

SURVEY QUESTIONS:

1. How often do you experience moral distress at work?				
Never	Rarely	Sometimes	Often	Always
Please elaborate on what causes moral distress for you:				

2. I feel empowered to advocate for my patients in my work environment.				
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

3. How often in your practice do you perceive a difference between goals of care between patient/family and the healthcare team?				
Never	Rarely	Sometimes	Often	Always

4. How comfortable are you identifying patients that would benefit from a Palliative Care consult?			
Not Comfortable	Somewhat Comfortable	Comfortable	Very Comfortable

5. How comfortable are you advocating for a Palliative Care consult from the provider?			
Not Comfortable	Somewhat Comfortable	Comfortable	Very Comfortable

6. How often do you perceive that a patient likely meets triggers for Palliative Care and/or has unmet Palliative Care needs?				
Never	Rarely	Sometimes	Often	Always

7. How often do you advocate for a Palliative Care consult for one of your ICU patients in rounds?			
Greater than 4 times a month	2-3 times a month	Once a month	Never

8. Palliative Care is best utilized in situations when it appears that the patient's clinical status is declining without meaningful hope for recovery.	
True	False

9. Palliative Care should only be provided for patients who have exhausted all other options for treatment.	
True	False

10. Palliative Care is appropriate in and compatible with the critical care setting.	
True	False

11. I am aware of things I can do at the bedside to provide my patients with primary Palliative Care.	
True	False
Please provide examples of what this may look like:	

12. Are you aware of any existing *institution-based* triggers for Palliative Care consultation?	
Yes	No
Please describe, if aware:	

13. Are you aware of any existing *evidence-based* triggers (ie. from research/literature) for Palliative Care consultation?	
Yes	No
Please describe, if aware:	

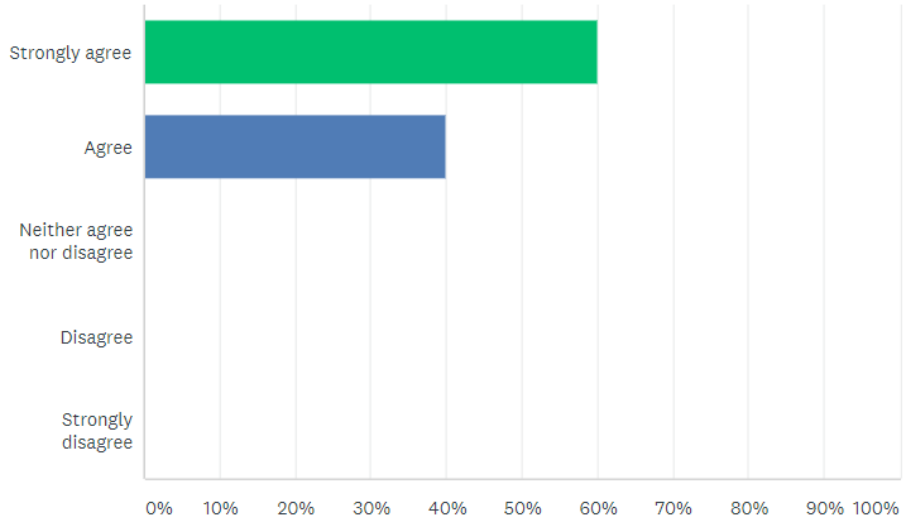
14. Utilizing a screening tool with evidence-based triggers for Palliative Care would help empower me to advocate for a Palliative Care consult for my patient when warranted.				
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

Appendix T

Preassessment Survey Results from Nurse Unit Leaders

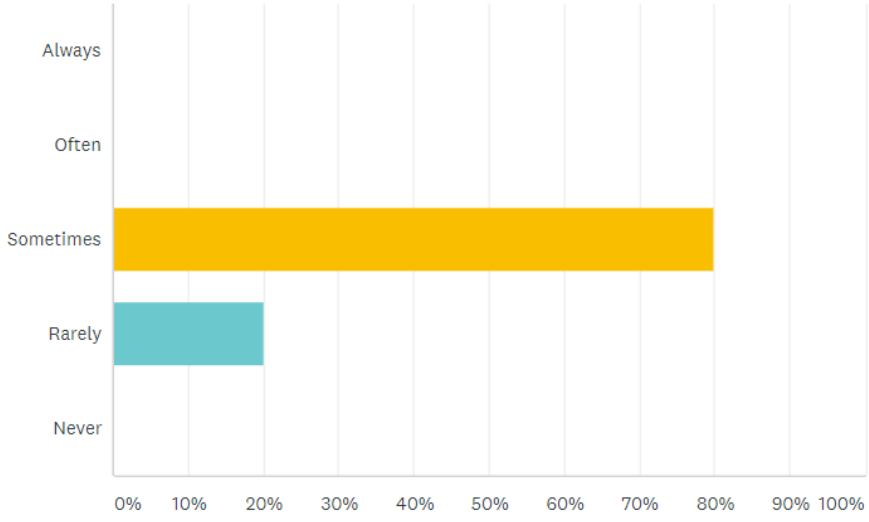
Most nurses believe that Palliative Care services are an essential component of care delivery in the ICU setting.

Answered: 5 Skipped: 0



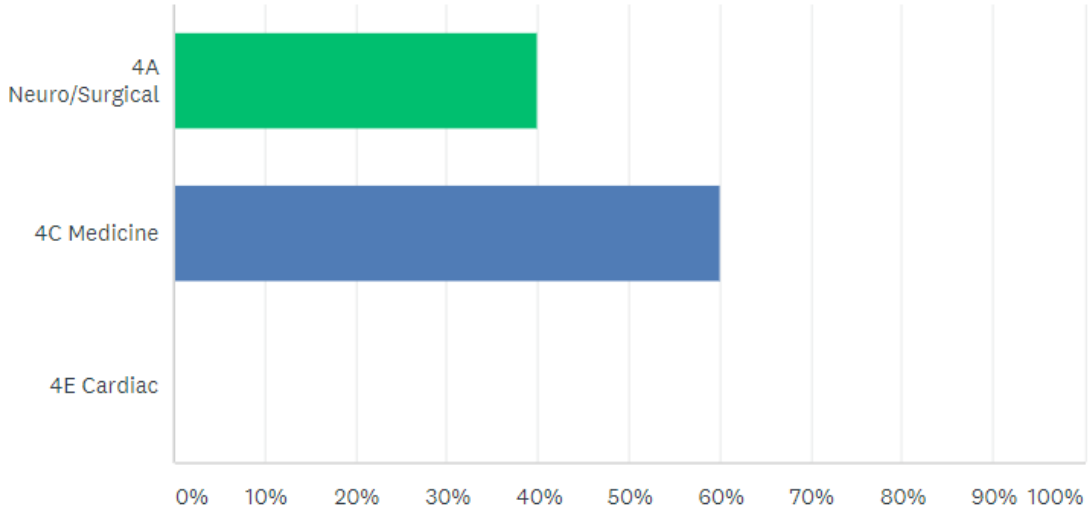
If colleagues were asked how often Palliative Care is used appropriately in the ICU setting, most would answer _____?

Answered: 5 Skipped: 0



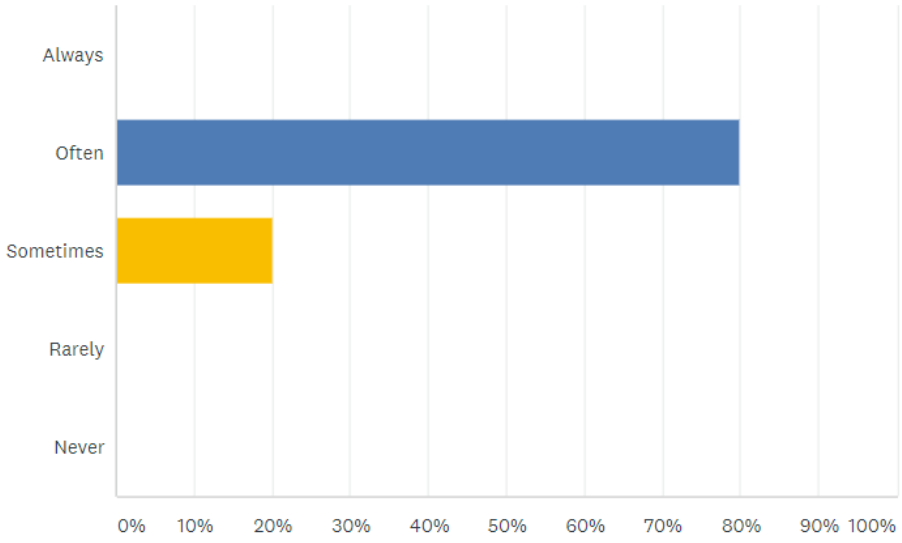
What unit do you work on?

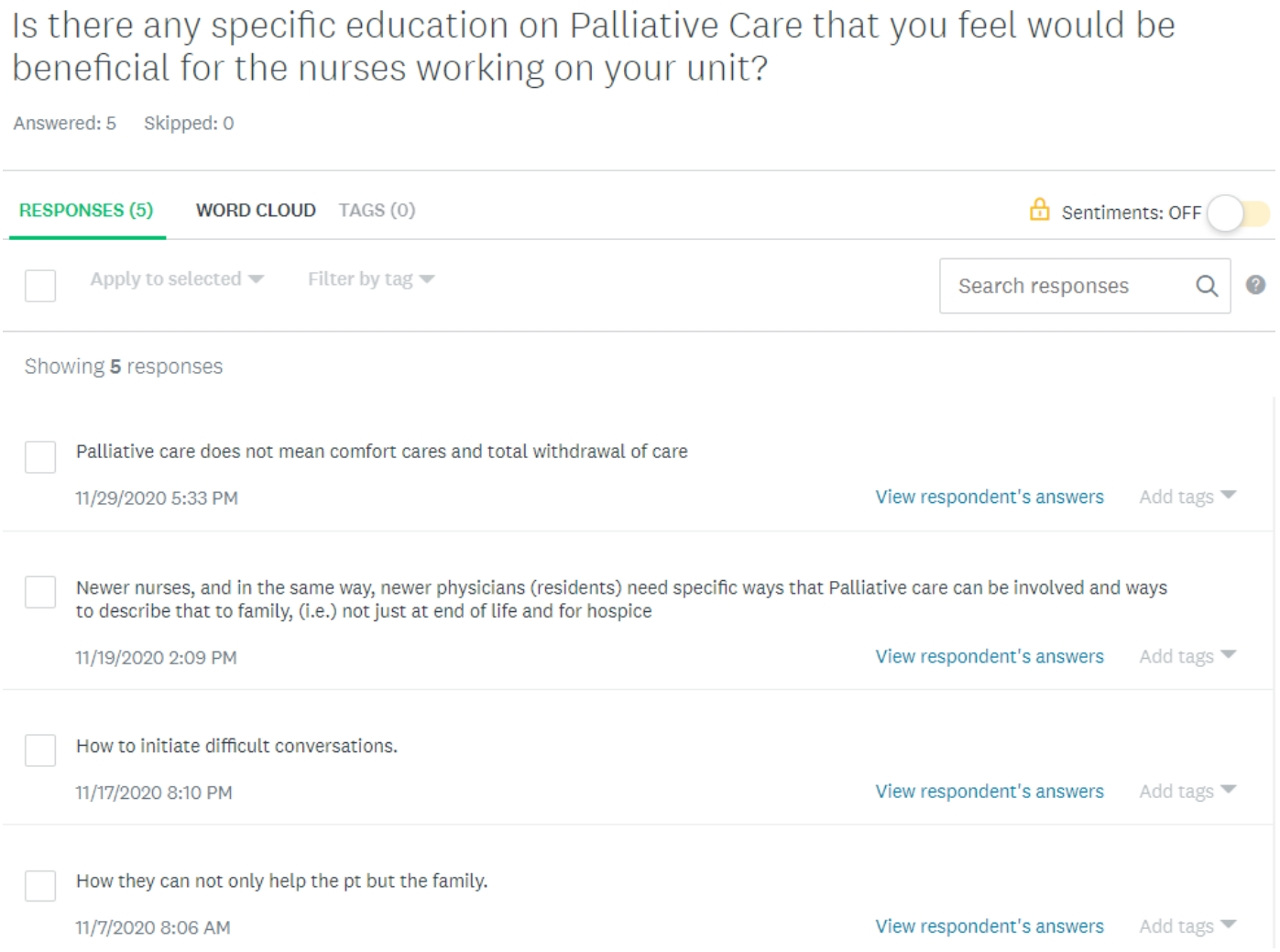
Answered: 5 Skipped: 0



How often do nurses perceive a difference between the goals of care of the patient/family and the goals of the healthcare team?

Answered: 5 Skipped: 0





Is there any specific education on Palliative Care that you feel would be beneficial for the nurses working on your unit?

Answered: 5 Skipped: 0

RESPONSES (5) WORD CLOUD TAGS (0) Sentiments: OFF

Apply to selected Filter by tag Search responses

Showing **5** responses

Palliative care does not mean comfort cares and total withdrawal of care

11/29/2020 5:33 PM View respondent's answers Add tags

Newer nurses, and in the same way, newer physicians (residents) need specific ways that Palliative care can be involved and ways to describe that to family, (i.e.) not just at end of life and for hospice

11/19/2020 2:09 PM View respondent's answers Add tags

How to initiate difficult conversations.

11/17/2020 8:10 PM View respondent's answers Add tags

How they can not only help the pt but the family.

11/7/2020 8:06 AM View respondent's answers Add tags

Do you have any feedback on the evidence-based Palliative Care screening tool (attached to the email)?

Answered: 5 Skipped: 0

RESPONSES (5) WORD CLOUD TAGS (0) Sentiments: OFF

Apply to selected Filter by tag Search responses

Showing **5** responses

no 11/29/2020 5:33 PM	View respondent's answers	Add tags
I think that the tool is great. and covers many of the patients where nursing is frequently having to push and ask for a palliative consult and will be a great tool to get palliative involved sooner. 11/19/2020 2:09 PM	View respondent's answers	Add tags
N/A 11/17/2020 8:10 PM	View respondent's answers	Add tags
no 11/7/2020 8:06 AM	View respondent's answers	Add tags

Appendix U

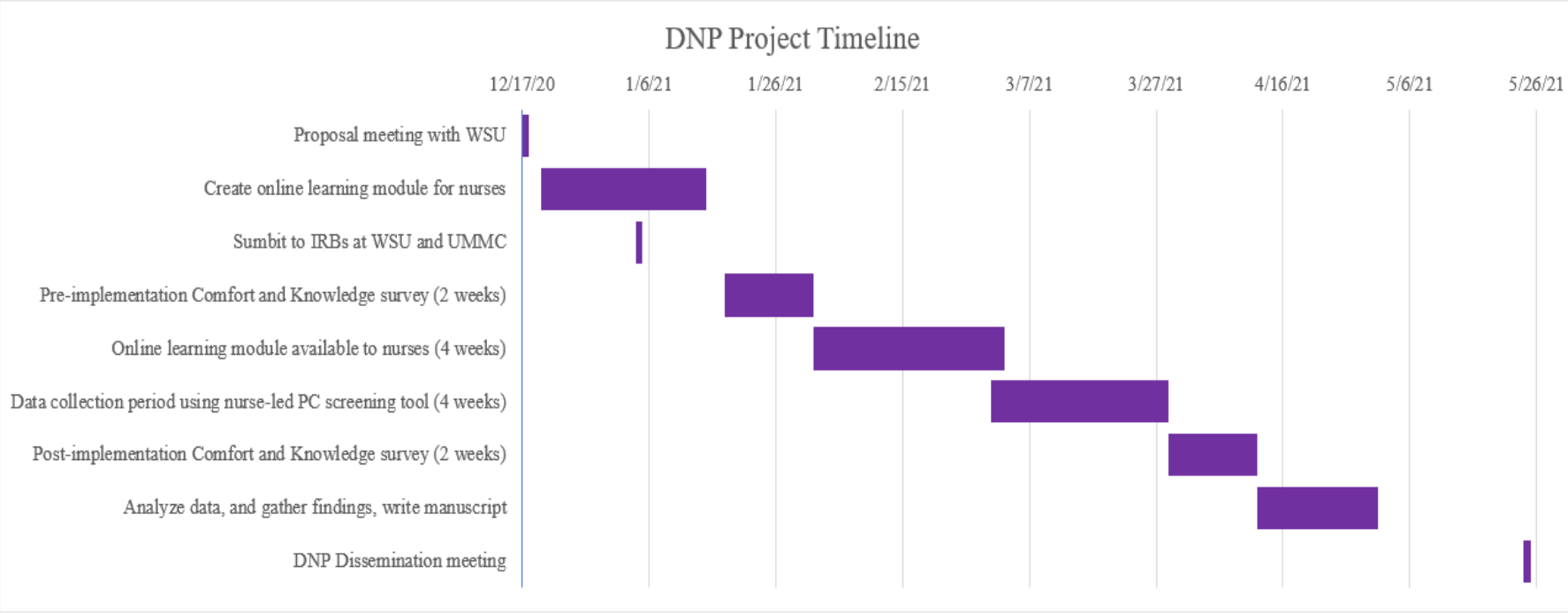
Projected Timeline

Date	**Goal**
12/17/2020	Proposal meeting with WSU
12/20/2020-01/15/2021	Create online education module on integration of palliative care in ICU and use of NL-PCST for ICU nurses
01/04/2021	File DNP project proposal with IRB at WSU and University of Minnesota Medical Center
01/18/2021-01/31/2021	Administer PC-ICU pre-implementation survey to nurses
02/01/2021-02/28/2021	Give nurses 4 weeks to complete online education module
03/01/2021-03/28/2021	Implement use of NL-PCST for 4 weeks and collect data
03/29/2021-04/11/2021	Administer PC-ICU survey
04/12/2021-04/23/2021	Analyze data (WSU statistician) and gather findings
05/24/2021	DNP Dissemination meeting

*All dates mentioned in timeline are tentative and subject to change

Appendix V

Gantt Chart



Appendix W1

Email Script to Nurse Managers for Surveying NULS

Dear ICU Nurse Managers,

Before moving forward with our Nurse Driven Palliative Care Initiative, we need to assess the ICU for an overall need for this project. With your permission, we would like to do this by asking the NULS to participate in a brief 4 question survey via survey monkey. This will provide us with a generalized idea of how palliative care is perceived on each unit. Can you please send this survey through the following link to you NULs? The survey will include the following questions:

1. **What unit do you work on?**
2. **Most nurses believe that Palliative Care services are an essential component of care delivery in the ICU setting.**

   Strongly Disagree Disagree Undecided Agree Strongly Agree
3. **If colleagues were asked how often Palliative Care is used appropriately in the ICU setting, most would answer _____?**

   Never Rarely Sometimes Often Always
4. **How often do nurses perceive a difference in the goals of care of the patient/family and the goals of the healthcare team.**

   Never Rarely Sometimes Often Always
5. **Is there any specific education on palliative care that you feel would be beneficial for the nurses working on your unit?**
6. **Do you have any feedback on the evidence-based palliative care screening tool?**

Here is the email we would appreciate you forwarding to the NULs:

Dear Nurse Unit Leaders,

We are Andrea Kirk and Erin Leach, Acute Care DNP students at Winona State University, as well as current ICU nurses. We are developing a project focusing on the use of Palliative Care in conjunction with ICU care. For purposes of this project, we are using the following definition of Palliative Care: "a medical specialty that alleviates suffering and optimizes quality of life by addressing the physical, emotional, and spiritual issues that arise during illness" (Finkelstein et al., 2016). We know firsthand that providing care to critically ill patients can be stressful, and research indicates that ICU nurses suffer a disproportionate amount of moral distress and burnout. The literature also provides evidence that increasing Palliative Care use in the ICU setting has immense benefits for patients. We hypothesize than an increase in Palliative Care utilization will not only lessen the suffering of our patients, it will reduce the moral distress of the nursing staff as well. We hope to provide education to nurses about how Palliative Care is complementary to the aggressive care model typical in the ICU as well as implement an evidence-based screening tool to empower them to advocate for a Palliative Care consult during daily interdisciplinary rounds.

As recognized leaders on your units, we are asking that you act as a representative sample of your team to give us some feedback about the current culture of Palliative Care on your ICU units. We are asking that you please complete this brief, 6-question survey to provide us with some baseline data. Additionally, please see the attached Palliative Care nurse-led screening tool. If you have any feedback regarding the tool, please include your input on the survey. It would be greatly appreciated if you can complete this survey within 1 week. Your input is extremely valuable and we extend our gratitude for your participation.

Thank you,

Erin Leach and Andrea Kirk

Survey Monkey: https://www.surveymonkey.com/r/V8VCQJF

Appendix W2

Email Script to Nurse Mangers to Recruit Nurse Champions

ICU Nurse Managers,

Andrea Kirk and Erin Leach are near the implementation phase of our nurse-led Palliative Care screening tool project, and we wanted to fill you in on our progress and future plans. To gather more participation in this project, we are asking for your help recruiting nurse champions. Ideally, we would like at least 2 nurse champions from each unit. The following is a description of the nurse champion position. Are you comfortable sending this to your nurses in an email, or do you have any other feedback regarding what you'd like us to include or change?

Nurse Champions Wanted For A Nurse-Led Palliative Care Screening Tool Initiative

A new project will be rolling out soon conducted by two DNP students from Winona State University. They understand, as your fellow ICU nurse peers, the challenges that arise every day for nurses in the ICU. The purpose of this project is to promote nurse empowerment, which has been linked by research to decrease moral distress. A screening tool has been developed based on a series of 5 evidence-based criteria from the most recent research of common Palliative Care triggers amongst ICU patients. The nurses will complete this tool daily prior to multidisciplinary rounds, and if the patient meets any of the criteria for a Palliative Care consult, it will be the nurse's responsibility to recommend a consult. As a nurse champion, you will serve as an advocate for the use of this tool during your regularly scheduled shifts. There are no additional time requirements outside of your scheduled appointment. This is a great opportunity to become more involved in project development of your units. If you are interested in this opportunity, please contact your nurse manager.

Appendix W3

Email Script to Nurses for Project Phases

Pre-Implementation Phase:

ICU Nurses,

A new project will be coming to our ICUs that encompasses a Nurse-Led Palliative Care Screening Tool. This tool consists of five evidence-based screening criteria for a Palliative Care consult. The inspiration for this project was driven by your nursing peers who understand firsthand how challenging working in the ICU environment can be, and the toll it can take on your physical and mental well-being. Studies have shown that using a multidimensional intervention to empower nurses can in turn reduce moral distress. This intervention consists of three components which includes a pre-and-post implementation survey, an education program through the LMS, and a nurse-led screening tool for Palliative Care that will be completed by nurses and discussed daily in multidisciplinary rounds. The Nurse-Led Palliative Care Screening Tool is a resource that will be valuable to nurses, patients, and their family members. Common causes of moral distress in ICU nurses include providing futile care, and discrepancies among patient/family and provider goals of cares. There are many misconceptions about Palliative Care and the services they provide, and the education module provides some clarification on how Palliative Care can be integrated into ICU care. Here is a brief project outline and timeline:

- 2 weeks- Pre-Implementation Nurse Survey Period
- 4 weeks- Completion of LMS
- 4 weeks- Implementation of Nurse-Led Screening Tool
- 2 weeks- Post-Implementation Nurse Survey Period

Implementation Phase of Nurse-Led Palliative Care Screening Tool:

ICU Nurses,

Today the Nurse-Led Palliative Care Screening Tool will be implemented into practice for all ICU patients. We understand that there is already a lot that is expected of you, and that your time is valuable. Keep in mind that this tool is not meant to be a burden, but is meant to be used as a resource for nurses to feel empowered and comfortable advocating for Palliative Care when it is appropriate for your patients. We also understand that there may be resistance from providers when patients meet the evidence-based criteria. Please utilize the communication strategies discussed in the LMS when working with providers. Your feedback is critical to the success of this project, therefore we strongly encourage you to comment on your experience, including any issues you experienced using the tool, or discussions regarding Palliative Care consults during multidisciplinary rounds. We appreciate your cooperation.

Post-Implementation Phase:

Registered Nurses,

Thank you for your cooperation over the last few months with carrying out the Nurse-Led Palliative Care Screening Tool project. To determine if the education intervention and utilization of the Nurse-Led Screening Tool was impactful, this project will conclude with the post-implementation survey. This will be the same survey that was administered prior to implementation of the Nurse-Led Palliative Care Screening Tool. The results will be compared to see if there was a significant difference in the amount of knowledge acquired about Palliative Care and its utilization in the ICU setting, how comfortable nurses are advocating for Palliative

Care based on the evidence-based screening tool, and whether or not nurses feel more empowered in comparison to before use of the screening tool began.

Appendix W4

Email Script Reminders to Nurses

Pre-Implementation PC-ICU Survey Reminder

Dear Nurses,

We are Andrea Kirk and Erin Leach, two DNP students at Winona State University and we are starting our DNP project involving the utilization of Palliative Care in all of the ICUs. To gather some data before implementing our education module and use of the evidence-based Nurse-Led Palliative Care Screening Tool, we would like to gather some baseline information in the form of a survey. Your participation is greatly appreciated, and the survey should only take approximately 5-10 minutes of your time. If you complete the survey you will be eligible for a $25 Amazon gift card through a weekly drawing. Please click the link below to complete the survey.

Gratefully,

Andrea Kirk and Erin Leach

Completion of Online Education Module Reminder

Dear Nurses,

This is a friendly reminder that there is a Palliative Care in the ICU education module through the LMS that should be completed by 2/28/2021. The module is open for 4 weeks. This module includes how Palliative Care is integrated into ICU patient care, primary Palliative Care skills, communication strategies, how to use the Nurse-Led Palliative Care Screening tool, and how it will be implemented in the upcoming weeks. Completion of this module is essential for successful implementation of the Nurse-Led Palliative Care Screening Tool.

Gratefully,

Andrea Kirk and Erin Leach

Post-Implementation Survey Reminder

Dear Nurses,

Thank you so much for your continued participation and cooperation with our Palliative Care DNP project! Now that the implementation phase of the online education module and the Nurse-Led Palliative Care Screening Tool has been completed, we need to collect some data to determine the effectiveness of our interventions. The overarching goals of this project were to enhance comfort and knowledge in Palliative Care and to feel empowered advocating for Palliative Care if your patient is meeting evidence-based triggers. To evaluate the effectiveness of these interventions, we are asking that you complete the same survey that you did prior to the implementation phase of this project. Your participation is greatly appreciated, and the survey should only take approximately 5-10 minutes of your time. If you complete the survey you will be eligible for a $25 Amazon gift card through a weekly drawing. Please click the link below to complete the survey.

Gratefully,

Andrea Kirk and Erin Leach

Appendix X

Draft of Flyer

Empowering Nurses Through the Use of a Nurse-Led Palliative Care Screening Tool

Goals of this Nursing Initiative

- Increase knowledge regarding integration of Palliative Care in critically ill patients
- Review primary Palliative Care skills that nurses can incorporate into patient care
- Empower nurses
- Reduce moral distress in nurses
- Enhance communication about goals of care between patients and healthcare providers

Phase 1: Participate in pre-implementation nurse questionnaire
Phase 2: Complete online education module via LMS
Phase 3: Implementation of the Nurse-Led Palliative Care Screening Tool
Phase 4: Participate in post-implementation nurse questionnaire